

# SITE INSPECTION WORKSHEET (Region I version 6/30/95)

## WARNING!!

EPA has determined that the HRS score of any site that is progressing towards listing on the NPL is confidential. Deliberations regarding scoring or listing issues, the site specific status, and HRS scores cannot be released or discussed with non-Agency persons. For additional guidance see the April 30, 1993 OSWER Directive 9320.1-11.

## SITE LOCATION

Site Name: Metals Testing Company (Former)

Street Address: 570 Sullivan Avenue

City: South Windsor

State:  
CT

Zip Code:  
06074

Telephone:  
(860) 627-7613

CERCLIS ID No.: CTD055506828

Coordinates: Latitude: 41° 51' 4.8" N  
Longitude: 72° 34' 48.75" W

## OWNER/OPERATOR IDENTIFICATION

Owner: William and Marjorie Myette

Operator: W.F. Myette Corporation

Owner Address: P.O. Box 505

Operator Address: 570 Sullivan Avenue

City: South Windsor

City: South Windsor

State: CT

Zip Code:  
06074

Telephone:

(860) 627-7613

State:  
CT

Zip Code:  
06074

Telephone:

(860) 289-0711

## SITE EVALUATION

Agency/Organization: WESTON/START

TDD No.: 97-02-0009

Investigator: Michael G. Jennings

Date: 15 January 1998

## EPA CONTACT

EPA SAM: Don Smith

Address: JFK Federal Building

City: Boston

State: MA

Zip Code: 02203

Telephone: (617) 573-9648

EPA Reviewer: D Smith

Date: 1-21-98 Final

US EPA REGION I HAS  
DETERMINED THAT THIS DOCUMENT  
MAY BE RELEASED  
DATE: 1-22-98



## GENERAL INFORMATION

**Site Description and Operational History:** Provide a brief description of the site and its operational history. State the site name, owner, operator, type of facility and operations, size of property, active or inactive status, and years of waste generation. Summarize waste treatment, storage, or disposal activities that have or may have occurred at the site; note whether these activities are documented or alleged. Identify all source types and prior spills, floods, or fires. Summarize highlights of the PA and other investigations. Cite references.

The Metals Testing Company (Former) property (the property) consists of two parcels totaling approximately 42,250 square feet (ft<sup>2</sup>), located at 570 Sullivan Avenue in South Windsor, Hartford County, Connecticut at coordinates 41° 51' 4.8" north latitude and 72° 34' 48.75" west longitude (Figure 1). The South Windsor Tax Assessor's Office describes the property as Map No. 111-49 and Parcels Nos. 1 and 2. Contamination detected on the property, to date, has been limited to Parcel No. 1. The property has been owned by William and Marjorie Myette since 1979. The W. F. Myette Corporation currently occupies and operates the property as a warehouse for materials associated with a sales and service business for overhead cranes, hoists, and other material handling equipment [1;2;3].

A single-story, steel-framed, metal sided industrial building is located on the property [1]. The building was constructed in 1980 and occupies approximately 5,000 ft<sup>2</sup> of the property. Approximately 30% of the property is asphalt paved (Figure 2) [1].

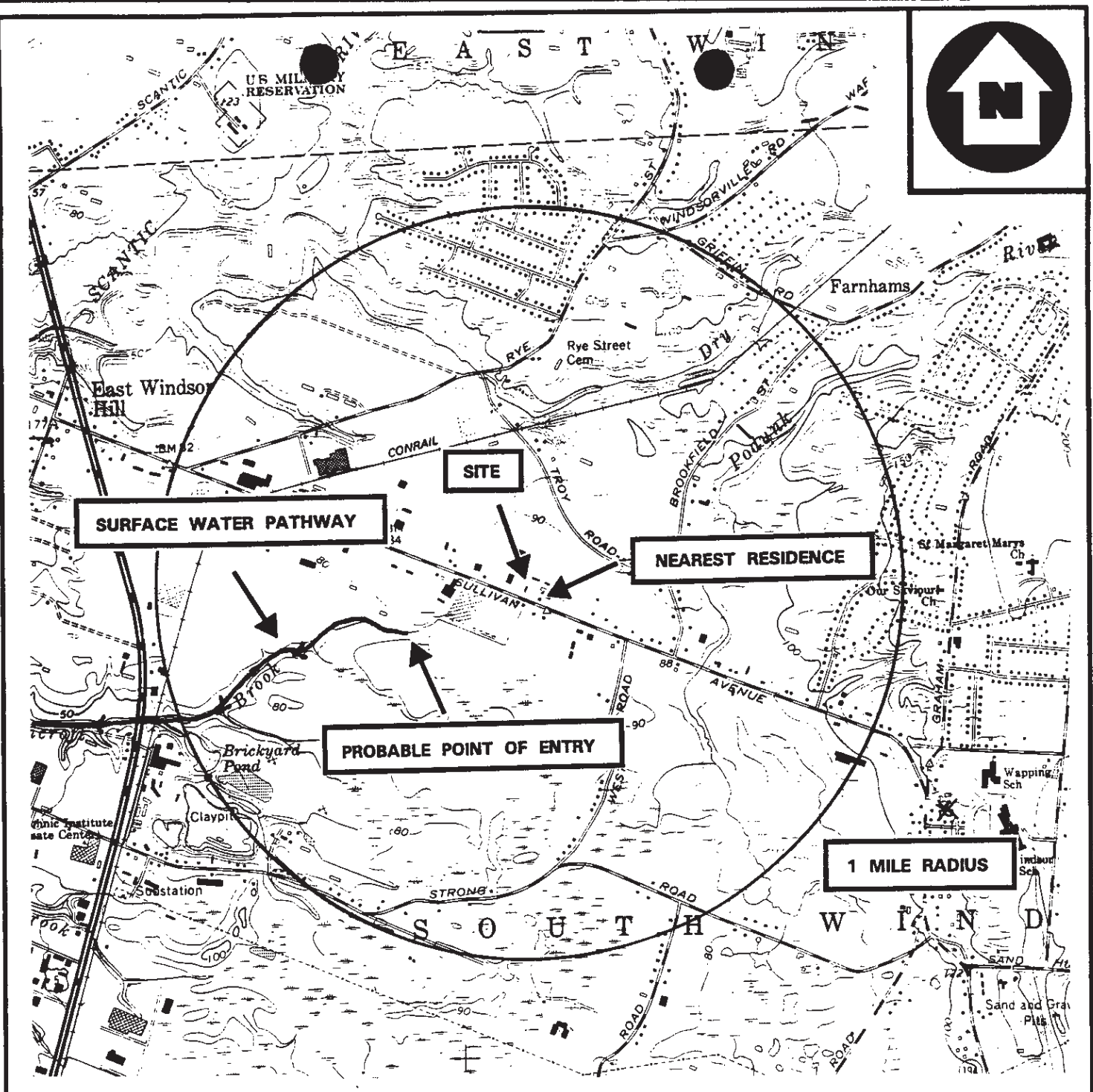
From approximately 1980 until August 1990, the Metal Testing Company (MTC) operated on the property under a lease agreement. MTC formerly conducted non-destructive testing of stainless steel, titanium, nickel, and aluminum aircraft components on the property. Operational processes included ultrasonic testing, fluorescent penetrant testing, magnetic particle inspection, etching, and degreasing with trichloroethylene (TCE) [4].

Compounds reportedly utilized on site by MTC and the maximum quantities of these materials stored on the property at any particular time are detailed in the following table.

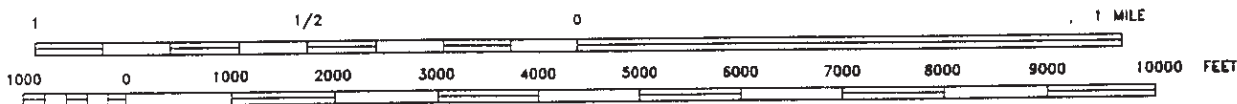
**Compounds Formerly Utilized on the Property by MTC**

Compound	Maximum Quantity
Trichloroethylene	550 gallon tank
Sodium Hydroxide	Six 500 pound containers
Hydrochloric Acid	Four 55-gallon drums
Hydrofluoric Acid	Two 55-gallon drums
Sulfuric Acid	Two 55-gallon carboys
Phosphoric Acid	Two 55-gallon carboys
Nitric Acid	Four 55-gallon drums
Ammonium Bifluoride	100 pounds
Xylene	One 10-gallon container
Acetone	One 55-gallon drum
Methyl Ethyl Ketone	One 25-gallon container

[4]



BASE MAP IS A PORTION OF THE FOLLOWING 7.5 U.S.G.S. QUADRANGLE(S):  
MANCHESTER, CT 1963, PHOTOREVISED 1984



QUADRANGLE LOCATION

### LOCATION MAP

METALS TESTING COMPANY (FORMER)  
570 SULLIVAN AVENUE  
SOUTH WINDSOR  
CONNECTICUT



REGION 1 SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

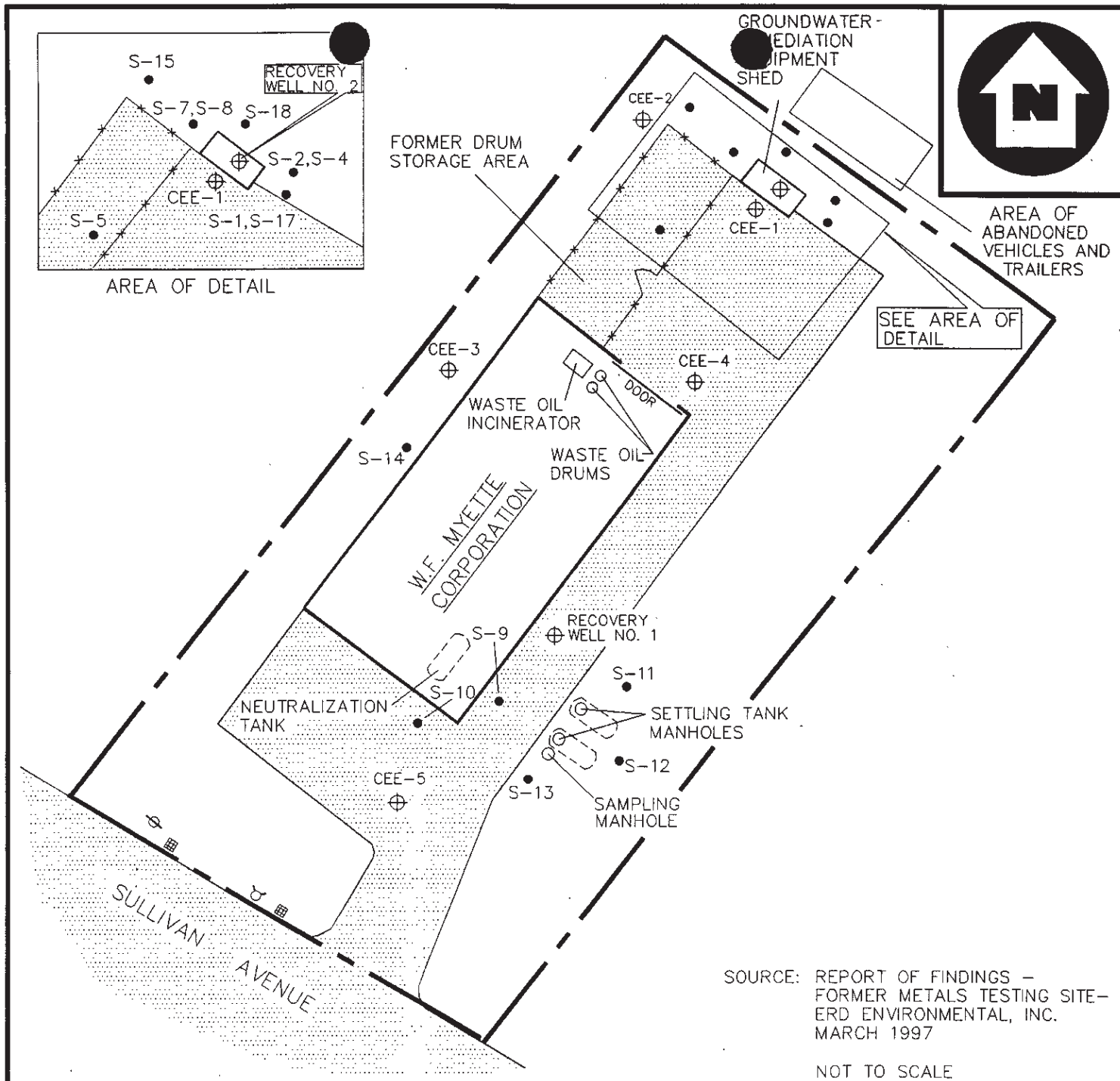
TDD #  
97-02-0009

DRAWN BY:  
W. SHAW

DATE  
6/9/97

FILE NAME:  
S:\97020009\MTCFIG1.DWG

FIGURE 1



- SOIL SAMPLE LOCATION
- CEE-5 ⊕ MONITORING WELL (SCREENED IN OVERBURDEN)
- \*—\*— FENCE LINE
- — — — — PROPERTY LINE
- PAVED AREA
- UNDERGROUND STORAGE TANK (UST)
- CATCHBASIN
- UTILITY POLE
- FIRE HYDRANT

### SITE SKETCH

METALS TESTING COMPANY (FORMER)  
576 SULLIVAN AVENUE  
SOUTH WINDSOR, CONNECTICUT



MANAGERS DESIGNERS/CONSULTANTS  
REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TDD #  
97-02-0009

DRAWN BY:  
W. SHAW

DATE  
6/27/97

FILE NAME:  
S:\97020009\FIG2.DWG

FIGURE 2



## GENERAL INFORMATION (Continued)

Virgin TCE used in the MTC degreasing operations was stored in a 550-gallon aboveground storage tank (AST). The AST was located on a concrete pad in the shipping and receiving area of the facility building. The TCE was piped to the degreaser via aboveground piping which ran along the northeastern wall of the main testing area [4].

Wastewater (contaminated with metals) generated during the MTC etching processes was treated on site by pH adjustment and metal hydroxide settling prior to discharge to the South Windsor sanitary sewer system. Components of the treatment system consisted of a neutralization tank located in the building and several metal hydroxide settling tanks located underground, outside of the building. Additional discharges to the sanitary sewer system during MTC on-site operations consisted of non-contact cooling water from the vapor degreaser and ultrasonic testing procedures, as well as miscellaneous laboratory wastewaters. Discharges to the South Windsor sanitary sewer system were conducted under a State Discharge Permit [4].

MTC operated as a Resource Conservation and Recovery Act (RCRA) treatment, storage, and disposal facility until 1986 when their status was changed to that of Generator. In 1989, their RCRA status was changed from that of Generator to Small Quantity Generator. While MTC was in operation on the property, spent solvents, waste oil and penetrants, and metal hydroxide sludges were disposed of via a licensed waste hauler, Roy F. Weston, Inc. (WESTON®). Superfund Technical Assessment and Response Team (START) personnel were unable to locate any further information pertaining to off-site waste disposal [4].

On 18 October 1988, approximately three gallons of hydrofluoric acid were spilled outside on a paved area of the property. The acid spill was neutralized on site with soda ash. START personnel were unable to locate any further information regarding the acid spill and/or the treatment and disposal of materials associated with the acid spill [4].

Consulting Environmental Engineers, Inc. (CEE) collected soil samples from the property on 28 March 1990 for a report entitled *Soil and Groundwater Sampling and Analysis Summary for Metals Testing Company* (CEE environmental survey). The CEE environmental survey was conducted prior to the relocation of MTC to another parcel in South Windsor, Connecticut [5]. Fifteen soil samples (S-1, S-2, S-4, S-5, S-7 through S-15, S-17, and S-18) were collected as part of the survey. Soil samples were collected from 0 to 4 feet below grade on the property. The samples were collected from areas on the property that were thought to have been potentially impacted by historical on-site operations [5].

The soil samples were analyzed for total petroleum hydrocarbons (TPH) via EPA Method 418.1, halogenated volatile organic compounds (VOCs) via EPA Method 8010, and aromatic VOCs via EPA Method 8020. Several of the soil samples were also analyzed for seven leachable metals (aluminum, cadmium, chromium, lead, silver, nickel, and zinc) via the Extraction Procedure for Toxicity (EP TOX) method. All of the soil sample analyses were conducted by Averill Environmental Laboratory, located in Plainville, Connecticut [5].

Results of the soil sample analyses indicated that soils on the property contained elevated levels of five organic compounds [1,4-dichlorobenzene; 1,1,1,2-tetrachloroethane; tetrachloroethylene

## GENERAL INFORMATION (Continued)

(PCE); 1,1,2-trichloroethane; and TCE], one inorganic element (aluminum), and TPH. Detected concentrations ranged from 85 parts per billion (ppb) for 1,1,2-trichloroethane to 870 parts per million (ppm) for TPH [5].

On 16 April 1990, a CEE subcontractor (General Borings, Inc.) installed three overburden groundwater monitoring wells (CEE-1 through CEE-3) on the property as a component of the CEE environmental survey. These wells were sampled by CEE personnel on 24 April 1990 [5].

The groundwater samples were analyzed by Averill Environmental Laboratory for TPH via EPA Method 418.1 and for halogenated VOCs via EPA Method 601. The results of the analyses conducted on the groundwater samples indicated that seven halogenated VOCs were present in one or more of the groundwater samples. However, two of the halogenated VOCs detected (dibromochloromethane and methylene chloride) were not present in the March 1990 soil samples and also were not used on the property by MFC. Therefore, these compounds will not be attributed to the property and will not be discussed further in this report. Concentrations of the remaining five halogenated VOCs attributable to the property (1,1-dichloroethylene; 1,1,1,2-tetrachloroethane; PCE; 1,1,1-trichloroethane; and TCE) ranged from 5.9 to 5,500 ppb. Additional information concerning the groundwater sampling is presented in the Groundwater Pathway section of this evaluation [5].

A second spill involving approximately 30 gallons of TCE, was reported to the Connecticut Department of Environmental Protection (CT DEP) on 30 April 1990. The CT DEP Emergency Incident Report for the incident indicates that the spill occurred on an unknown date and was merely reported on 30 April 1990 [4].

On 4 June 1990, General Boring, Inc. installed two additional monitoring wells (CEE-4 and CEE-5) on the property. On 11 June 1990, groundwater samples were collected from the three previously installed wells and the two newly installed wells. Groundwater samples were analyzed by an unknown laboratory for halogenated VOCs. The five previously detected halogenated VOCs attributable to the property were still present in the groundwater sample from monitoring well CEE-1. In addition, a previously non-detected halogenated VOC (1,1,2-trichloroethane) was found to be present in the June 1990 groundwater sample collected from monitoring well CEE-1 [4;13].

As a result of the detection of TCE in soil and groundwater on the property, a soil vapor extraction system and a groundwater pump and treat remediation system were installed on the property. These systems were installed by Tri-S Environmental Consulting, Inc. (TEC). START personnel were unable to determine the exact dates of installation for these systems. The soil vapor extraction system operated on the property from January 1991 until approximately October 1994. The soil vapor extraction system was shut down due to the non-detection of VOCs in the system influent. This groundwater remediation system is still in operation on the property, and has operated on the property since October 1991 [6].

## GENERAL INFORMATION (Continued)

On 7 October 1992, representatives of TEC collected surficial soil samples from several of the locations where soil samples had been collected in 1990. The soil samples were collected at depths between 0 and 3.5 feet below grade. The area of the property that the soil samples were collected from had been under remediation via soil vapor extraction for approximately 19 months. The soil samples were sent to Matrix Analytical Laboratory in Hopkinton, Massachusetts for halogenated VOC analysis by EPA Method 8010. No halogenated VOCs were detected in any of the soil samples collected on 7 October 1992 [7].

On 5 April 1994, the CT DEP completed an Environmental Protection Agency (EPA) Preliminary Assessment (PA) of the property. No environmental samples were collected as part of the 1994 EPA PA [4]. The PA indicated that MTC had received a written Order (No. WC-2592) dated October 1979 from the Water Compliance Unit of CT DEP in regards to the discharge of film processing wastewater to an unnamed stream adjacent to the building MTC was occupying. START personnel verified that MTC was not operating at the 570 Sullivan Avenue property in 1979 and determined that Order No. WC-2592 does not apply to the 570 Sullivan Avenue property. No further mention of the discharging of film processing wastewater will be made in this evaluation [4].

On 29 May 1997, START personnel performed an on-site reconnaissance at the property. The following observations were made by START personnel.

START personnel observed that there are two structures on the property. A large steel-framed, metal-sided building currently houses the warehoused materials of the W. F. Myette Corporation. The footprint of this building is approximately 5,000 ft<sup>2</sup>. The second structure located on the property is a wood-framed and wood-sided shed which houses the pump and treat groundwater remediation system. The footprint of this building is approximately 200 ft<sup>2</sup> [3].

START personnel observed five flush-mounted groundwater monitoring wells (CEE-1 through CEE-5) on the property. The groundwater monitoring wells are located radially around the large steel building on the property. START personnel also observed one recovery well (RW-1), a component of the groundwater treatment system, on the property. A second recovery well (RW-2) is located under the shed housing the groundwater treatment system. START personnel conducted air monitoring in the vicinity of the wells with a photoionization detector (PID). No elevated readings were detected in the vicinity of the monitoring or recovery well locations [3].

START personnel observed that components of the former soil vapor extraction system were still present on the property. A synthetic membrane cover used for vapor recovery was still present on portions of the property formerly contaminated with TCE. The soil vapor extraction system has not operated since approximately October 1994. The system was shut down due to the non-detection of VOCs in soil samples collected from the portion of the property where TCE was released [3].

START personnel observed what appeared to be approximately 10 to 15 abandoned vehicles on the property, along the northeastern property boundary. These vehicles consisted of trucks,



## GENERAL INFORMATION (Concluded)

cars, forklifts, and other pieces of material handling equipment. Several closed trailers were also observed along the northeastern property boundary [3].

In the southeast corner of the property, START personnel observed several access manholes to the metal hydroxide settling tanks which still exist on the property. The current owner of the property did not have any information concerning the settling tanks [3].

START personnel observed an area along the western extent of the property which formerly housed a drum storage area. MTC stored drums in this area when they operated on the property. The former drum storage area was observed to be surrounded by a 6-foot chain-link fence and contained several pieces of scrap metal [3].

Due to the method by which and condition in which the materials were stored within the large on-site steel building, for health and safety reasons START personnel did not enter the warehouse area of the building during the on-site reconnaissance. By peering into the building via a large receiving door located on the northeast side of the building, START personnel observed two metal 55-gallon drums with hand-written labels indicating that they contained waste oil. According to the property owner, the waste oil was crankcase and hydraulic oil associated with the maintenance activities of his business. The waste oil is incinerated in an on-site CleanBurn<sup>™</sup> incinerator. The property owner further indicated that he is a distributor of CleanBurn<sup>™</sup> products and his incinerator is a demonstration model [3].

START personnel determined that the nearest residence to the property is located at 590 Sullivan Avenue, approximately 300 feet east of the property [3].

START personnel observed two catchbasins located along the southern portion of the property, which borders Sullivan Avenue. According to the owner of the property, the catchbasins are linked together and flow along Sullivan Avenue, to the northwest. At some point, the drainage system crosses under Sullivan Avenue and discharges to an unnamed stream that ultimately discharges to Bancroft Brook [3].

The location of the nearest private drinking water well was unable to be determined by START personnel. The 1994 PA indicated that the nearest private drinking water well was located approximately 2,250 feet north of the property along Troy Road. START personnel were unable to verify the location of the well or the present status of the well [3;4].

According to the CENTRACTS report for the property, there are approximately 34 people utilizing private groundwater sources within 0.25-radial miles of the property and 427 people utilizing private groundwater sources within 1-radial mile of the property. The nearest municipal well is a public supply well operated by the Hillsdale Water Company. This well is located approximately 1.33 miles southeast of the property and serves approximately 31 people in South Windsor [8].



## SOURCE EVALUATION

**Description of each Source:** Identify each source area by name and number, and classify each source into a source type category (see SI Table 1). Describe the dimensions of each source. Identify the hazardous substances associated with each source. Determine the containment characteristics for each source by pathway (see HRS Tables 3-2, 4-2, 6-3 and 6-9).

### Source No. 1: One-time Acid Release (Other)

Approximately three gallons of hydrofluoric acid were spilled outside on a paved area of the property on 18 October 1988. The acid spill was neutralized on site with soda ash. START personnel were unable to locate any further information regarding the acid spill and/or the treatment and disposal of materials associated with the acid spill. This source is available to all pathways [4].

### Source No. 2: One-time TCE Release (Other)

A spill involving approximately 30 gallons of TCE was reported to the CT DEP on 30 April 1990. The exact date of the spill is unknown. This source will be listed here, but evaluated as a component of Source No. 3: Chlorinated Solvent-laden soil [4].

### Source No. 3: Metal and Chlorinated Solvent-laden Soil (Contaminated Soil)

Soil samples collected from the property on 28 March 1990 indicated that the soils of the property contained elevated levels of several VOCs and one inorganic element (aluminum). A soil vapor extraction system was operational on the property from January 1991 until approximately October 1994. The soil vapor extraction system was shut down due to the non-detection of VOCs in the system influent. To date, VOCs continue to be detected in groundwater samples collected from below the property, indicating that additional soil contamination may exist at depth. For this evaluation, START personnel assume that the entire 42,250 ft<sup>2</sup> of the property is contaminated with metals and chlorinated solvents [5;9]. This source is available to all pathways.

### Source No. 4: Drums of Waste Oil (Drums)

Two 55-gallon drums, labeled as containing waste oil, were observed during the START on-site reconnaissance in the large steel building located on the property. According to the property owner, the waste oil is crankcase and hydraulic oil associated with the maintenance activities of his business [3]. This source is available to all pathways.

### Source No. 5: Former Drum Storage Area (Drums)

While MTC was operating on the property, a drum storage area located in the rear of the large steel building was utilized. START personnel were unable to locate any information regarding the size of the drum storage area or the exact number of drums stored at any particular time. The 1990 CEE soil and groundwater survey report indicated that several drums were observed in the drum storage area during CEE's work on the property. The CEE report further indicated that materials stored in the drum storage area included acetone, nitric acid, hydrofluoric acid, phosphoric acid, sodium hydroxide, kerosene-based zyglon penetrants, and TCE. These materials were reported to be stored in either 55-gallon drums or 30-gallon carboys. START personnel assume for this evaluation that the drum storage area stored approximately 15 drums on average [3;4]. This source is available to all pathways.

## SOURCE EVALUATION (Continued)

### Source No. 6: Wastewater Treatment System (Tanks)

While MTC was operating on the property, wastewater treatment was employed prior to discharging to the South Windsor sanitary sewer system. Two distinct wastewater streams were treated prior to discharge. Non-destructive testing wastewater was treated with a pH adjustment prior to discharge, and metal finishing wastewater from the etching process was treated to promote metal hydroxide settling. Components of the wastewater treatment system included a neutralization tank, located in the large building, and two settling tanks located underground outdoors [4]. This source is available to all pathways.

### Source No. 7: Former TCE Tank (Tanks)

Virgin TCE used in the MTC degreasing operations was stored in a 550-gallon AST. The AST was located on a concrete pad in the shipping and receiving area of the facility building. The TCE was piped to the degreaser via aboveground piping which ran along the northeastern wall of the main testing area [4]. This source is available to all pathways.

Source No.	Source Type	Pathway Availability			
		GW	SW	SE	A
1	Other	Y	Y	Y	Y
2	Other	Y	Y	Y	Y
3	Contaminated Soil	Y	Y	Y	Y
4	Drums	Y	Y	Y	Y
5	Drums	Y	Y	Y	Y
6	Tanks	Y	Y	Y	Y
7	Tanks	Y	Y	Y	Y

Legend: Y = available to pathway  
 N = not available to pathway  
 ? = availability unknown  
 I = ineligible waste

## SOURCE EVALUATION (Continued)

**Hazardous Waste Quantity (HWQ) Calculations:** SI Tables 1 and 2 (See HRS Tables 2-5, 2-6, and 5-2).

For each source, provide HWQ calculations by tier and provide assumptions. Note: HWQ calculations may be different for the soil exposure pathway.

This is a multiple source site. Due to insufficient data, Tier A (Hazardous Constituent Quantity) could not be evaluated. Tier B (Hazardous Wastestream Quantity) could only be evaluated for Source No. 1.

### Source No. 1: Other

Tier B: On 18 October 1988, three gallons of hydrofluoric acid were spilled on the property.  
Three gallons  $\times$  (10 pounds per gallon) = 30 pounds of hydrofluoric acid.  
 $30 \text{ pounds} \div 5,000 = 0.006$

Tier C: Three gallons of hydrofluoric acid were released.  
 $3 \div 500 = 0.006$

**WQ = 0.006**

Tier D: Insufficient information is available to evaluate the source on this tier.

### Source No. 2: Other Not evaluated

### Source No. 3: Contaminated Soil

Tier C: Insufficient information is available to evaluate the source on this tier.

Tier D: START personnel assume for this evaluation that the entire 42,250 ft<sup>2</sup> parcel contains metals and chlorinated solvent-laden soil.  
 $42,250 \div 3,400 = 12.43$

**WQ = 12.43**

### Source No. 4: Drums

Tier C: START personnel observed two drums, labeled as containing waste oil, in the large on-site building.  
 $2 \div 10 = 0.2$

**WQ = 0.2**

Tier D: Insufficient information is available to evaluate the source on this tier.

### Source No. 5: Drums

Tier C: START personnel assume for this evaluation that the drum storage area had a capacity of 15 drums.  
 $15 \div 10 = 1.5$

**WQ = 1.5**

Tier D: Insufficient information is available to evaluate the source on this tier.



## SOURCE EVALUATION (Concluded)

### Source No. 6: Tanks

Tier C: START personnel assume for this evaluation that the waste treatment system components consisted of three 250-gallon tanks.

$$750 \div 500 = 1.5$$

$$WQ = 1.5$$

Tier D: Insufficient information is available to evaluate the source on this tier.

### Source No. 7: Tanks

Tier C: The former virgin TCE storage tank had a volume of 550 gallons.

$$550 \div 500 = 1.1$$

$$WQ = 1.1$$

Tier D: Insufficient information is available to evaluate the source on this tier.

All of the sources evaluated are available to all pathways. The multiple source site Hazardous Waste Quantity (HWQ) value is calculated as follows:

$$0.006 + 12.43 + 0.2 + 1.5 + 1.5 + 1.1 = 16.736$$

$$1 < 16.736 < 100$$

$$HWQ = 1$$

However, since the Hazardous Constituent Quantity data are not complete, the HWQ = 10.

$$HWQ = 10$$

$$GW\ HWQ = 10$$

$$SW\ HWQ = 10$$

$$SE\ HWQ = 10$$

$$AIR\ HWQ = 10$$

**SI TABLE 1:HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES**

Tier	Source Type	Single Source Sites (assigned HWQ scores)				Multiple Source Sites
		HWQ = 10	HWQ = 100	HWQ = 10,000	HWQ = 1,000,000	Divisors for Assigning Source WQ Values
<b>A Hazardous Constituent Quantity</b>	N/A	HWQ = 1 if Hazardous Constituent Quantity data are complete  HWQ = 10 if Hazardous Constituent Quantity data are not complete	> 100 to 10,000 lbs	> 10,000 to 1 million lbs	> 1 million lbs	lbs ÷ 1
<b>B Hazardous Wastestream Quantity</b>	N/A	≤ 500,000 lbs	> 500,000 to 50 million lbs	> 50 million to 5 billion lbs	> 5 billion lbs	lbs ÷ 5,000
<b>C Volume</b>	Landfill	≤ 6.75 million ft <sup>3</sup> ≤ 250,000 yd <sup>3</sup>	> 6.75 million to 675 million ft <sup>3</sup> > 250,000 to 25 million yd <sup>3</sup>	> 675 million to 67.5 billion ft <sup>3</sup> > 25 million to 2.5 billion yd <sup>3</sup>	> 67.5 billion ft <sup>3</sup> > 2.5 billion yd <sup>3</sup>	ft <sup>3</sup> ÷ 67,500 yd <sup>3</sup> ÷ 2,500
	Surface impoundment	≤ 6,750 ft <sup>3</sup> ≤ 250 yd <sup>3</sup>	> 6,750 to 675,000 ft <sup>3</sup> > 250 to 25,000 yd <sup>3</sup>	> 675,000 to 67.5 million ft <sup>3</sup> > 25,000 to 2.5 million yd <sup>3</sup>	> 67.5 million ft <sup>3</sup> > 2.5 million yd <sup>3</sup>	ft <sup>3</sup> ÷ 67.5 yd <sup>3</sup> ÷ 2.5
	Drums	≤ 1,000 drums	> 1,000 to 100,000 drums	> 100,000 to 10 million drums	> 10 million drums	drums ÷ 10
	Tanks and non-drum containers	≤ 50,000 gallons	> 50,000 to 5 million gallons	> 5 million to 500 million gallons	> 500 million gals.	gallons ÷ 500
	Contaminated soil	≤ 6.75 million ft <sup>3</sup> ≤ 250,000 yd <sup>3</sup>	> 6.75 million to 675 million ft <sup>3</sup> > 250,000 to 25 million yd <sup>3</sup>	> 675 million to 67.5 billion ft <sup>3</sup> > 25 million to 2.5 billion yd <sup>3</sup>	> 67.5 billion ft <sup>3</sup> > 2.5 billion yd <sup>3</sup>	ft <sup>3</sup> ÷ 67,500 yd <sup>3</sup> ÷ 2,500
	Pile	≤ 6,750 ft <sup>3</sup> ≤ 250 yd <sup>3</sup>	> 6,750 to 675,000 ft <sup>3</sup> > 250 to 25,000 yd <sup>3</sup>	> 675,000 to 67.5 million ft <sup>3</sup> > 25,000 to 2.5 million yd <sup>3</sup>	> 67.5 million ft <sup>3</sup> > 2.5 million yd <sup>3</sup>	ft <sup>3</sup> ÷ 67.5 yd <sup>3</sup> ÷ 2.5
	Other	≤ 6,750 ft <sup>3</sup> ≤ 250 yd <sup>3</sup>	> 6,750 to 675,000 ft <sup>3</sup> > 250 to 25,000 yd <sup>3</sup>	> 675,000 to 67.5 million ft <sup>3</sup> > 25,000 to 2.5 million yd <sup>3</sup>	> 67.5 million ft <sup>3</sup> > 2.5 million yd <sup>3</sup>	ft <sup>3</sup> ÷ 67.5 yd <sup>3</sup> ÷ 2.5

SI TABLE 1:

## HAZARDOUS WASTE QUANTITY (HWQ) SCORES FOR SINGLE SOURCE SITES AND FORMULAS FOR MULTIPLE SOURCE SITES

Tier	Source Type	Single Source Sites (assigned HWQ scores)				Multiple Source Sites
		HWQ = 10	HWQ = 100	HWQ = 10,000	HWQ = 1,000,000	Divisors for Assigning Source WQ Values
D Area	Landfill	$\leq 340,000 \text{ ft}^2$ $\leq 7.8 \text{ acres}$	$> 340,000 \text{ to } 34 \text{ million ft}^2$ $> 7.8 \text{ to } 780 \text{ acres}$	$> 34 \text{ million to } 3.4 \text{ bil. ft}^2$ $> 780 \text{ to } 78,000 \text{ acres}$	$> 3.4 \text{ billion ft}^2$ $> 78,000 \text{ acres}$	$\text{ft}^2 \div 3,400$ $\text{acres} \div 0.078$
	Surface Impoundment	$\leq 1,300 \text{ ft}^2$ $\leq 0.029 \text{ acres}$	$> 1,300 \text{ to } 130,000 \text{ ft}^2$ $> 0.029 \text{ to } 2.9 \text{ acres}$	$> 130,000 \text{ to } 13 \text{ million ft}^2$ $> 2.9 \text{ to } 290 \text{ acres}$	$> 13 \text{ million ft}^2$ $> 290 \text{ acres}$	$\text{ft}^2 \div 13$ $\text{acres} \div 0.00029$
	Contaminated Soil	$\leq 3.4 \text{ million ft}^2$ $\leq 78 \text{ acres}$	$> 3.4 \text{ million to } 340 \text{ million ft}^2$ $> 78 \text{ to } 7,800 \text{ acres}$	$> 340 \text{ million to } 34 \text{ bil. ft}^2$ $> 7,800 \text{ to } 780,000 \text{ acres}$	$> 34 \text{ billion ft}^2$ $> 780,000 \text{ acres}$	$\text{ft}^2 \div 34,000$ $\text{acres} \div 0.78$
	Pile	$\leq 1,300 \text{ ft}^2$ $\leq 0.029 \text{ acres}$	$> 1,300 \text{ to } 130,000 \text{ ft}^2$ $> 0.029 \text{ to } 2.9 \text{ acres}$	$> 130,000 \text{ to } 13 \text{ million ft}^2$ $> 2.9 \text{ to } 290 \text{ acres}$	$> 13 \text{ million ft}^2$ $> 290 \text{ acres}$	$\text{ft}^2 \div 13$ $\text{acres} \div 0.00029$
	Land treatment	$\leq 27,000 \text{ ft}^2$ $\leq 0.62 \text{ acres}$	$> 27,000 \text{ to } 2.7 \text{ million ft}^2$ $> 0.62 \text{ to } 62 \text{ acres}$	$> 2.7 \text{ mil. to } 270 \text{ million ft}^2$ $> 62 \text{ to } 6,200 \text{ acres}$	$> 270 \text{ million ft}^2$ $> 6,200 \text{ acres}$	$\text{ft}^2 \div 270$ $\text{acres} \div 0.0062$

1 ton = 2,000 lbs = 1 yd<sup>3</sup> = 4 drums = 200 gallons

SI TABLE 2: HWQ SCORES FOR MULTIPLE SOURCE SITES

Site WQ Total	HWQ Score
0	0
1 <sup>a</sup> to 100	1 <sup>b</sup>
> 100 to 10,000	100
> 10,000 to 1,000,000	10,000
> 1,000,000	1,000,000

<sup>a</sup>If the HWQ total is between 0 and 1, round it to 1.<sup>b</sup>If the hazardous constituent quantity data are not complete, assign the score of 10.



# SI TABLE 3: WASTE CHARACTERIZATION WORKSHEET

Enter "NA" for substances which are not available to a pathway.  
Enter "NL" for substances values not listed in SCDM.  
Enter "-" for values not calculated due to substances values not listed in SCDM.  
Provide footnote for substances listed in table but not used for scoring purposes  
(e.g. BTEX substances attributable to a gasoline tank.)

Sources:  
1. Other  
3. Contaminated Soil  
5. Drums

4. Drums  
6. Tanks  
7. Tanks

			GROUNDWATER PATHWAY				SURFACE WATER PATHWAY					
Source	Hazardous Substance	Toxicity	GW Mobility (HRS Table 3-8)	Tox. x Mobility Value (HRS Table 3-9)	Pers. (HRS Tables 4-10 and 4-11)	Tox. x Pers. Value (HRS Table 4-12)	OVERLAND/FLOOD MIGRATION					
							Bioacc. Pot. (HRS Table 4-15)	Tox. x Pers. x Bioacc. Value (HRS Table 4-16)	Ecotox. (HRS Table 4-19)	Ecotox. x Pers. (HRS Table 4-20)	Eco. Bioacc. Pot. (HRS Table 4-20)	Ecotox. x Pers. x Eco. Bioacc. Value (HRS 4-21)
*	Acetone	10	1	10	0.4	4	0.5	2	100	40	0.5	20
3	Aluminum	NL	0.0001	--	1	--	50	--	100	100	50	5,000
*	Ammonium Bifluoride	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
3	Dichlorobenzene, 1,4-	10	1	10	0.4	4	50	200	100	40	50	2,000
3	Dichloroethylene, 1,1-	100	1	100	0.4	40	50	2,000	10	4	70	200
3	Dichloroethylene, cis-1,2-	100	1	100	0.4	40	5	200	NL	--	5	--
3	Dichloroethylene, trans-1,2-	100	1	100	0.4	40	50	2,000	1	0.4	50	20
*	Hydrochloric acid	100	1	100	0.4	40	0.5	20	1	0.4	0.5	0.2
1,*	Hydrofluoric acid	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
*	Methyl ethyl ketone (MEK)	10	1	10	0.4	4	0.5	2	1	0.4	0.5	0.2
*	Nitric acid	10	1	10	0.4	4	0.5	2	NL	--	0.5	--
*	Phosphoric acid	1,000	1	1,000	0.4	400	5,000	2E+06	NL	--	0.5	--
*	Sodium hydroxide	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
*	Sulfuric acid	1,000	1	1,000	0.4	400	0.5	200	10	4	0.5	2
3	Tetrachloroethane, 1,1,1,2-	100	1	100	0.4	40	50	2,000	10	4	50	200
3	Tetrachloroethylene	100	1	100	0.4	40	50	2,000	100	40	50	2,000
*	Titanium	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL	NL
3	Trichloroethane, 1,1,1-	1	1	1	0.4	0.4	5	2	10	4	5	20

# SI TABLE 3: WASTE CHARACTERIZATION WORKSHEET

Enter "NA" for substances which are not available to a pathway.  
 Enter "NL" for substances values not listed in SCDM.  
 Enter "-" for values not calculated due to substances values not listed in SCDM.  
 Provide footnote for substances listed in table but not used for scoring purposes  
 (e.g. BTEX substances attributable to a gasoline tank.)

Sources:  
 1. Other  
 3. Contaminated Soil  
 5. Drums

4. Drums  
 6. Tanks  
 7. Tanks

Source	Hazardous Substance	Toxicity	GROUNDWATER PATHWAY		SURFACE WATER PATHWAY							
			GW Mobility (HRS Table 3-8)	Tox. x Mobility Value (HRS Table 3-9)	Pers. (HRS Tables 4-10 and 4-11)	Tox. x Pers. Value (HRS Table 4-12)	Bioacc. Pot. (HRS Table 4-15)	OVERLAND/FLOOD MIGRATION				
								Tox. x Pers. x Bioacc. Value (HRS Table 4-16)	Ecotox. (HRS Table 4-19)	Ecotox. x Pers. (HRS Table 4-20)	Eco. Bioacc. Pot. (HRS Table 4-20)	Ecotox. x Pers. x Eco. Bioacc. Value (HRS Table 4-21)
3	Trichloroethane, 1,1,2-	1,000	1	1,000	0.4	400	50	20,000	10	4	50	200
3,6	Trichloroethylene	10	1	10	0.4	4	50	200	100	40	50	2,000
*	Xylene, p- (also use for total)	10	1	10	0.4	4	50	200	100	40	50	2,000

BCF

## NOTES:

SCDM Version: JUN96

SI Table 3 assumptions: liquid-phase waste disposed of in non-karst terrane, fresh water river environment values.

\*Indicated compounds were used on the property during Metal Testing Companies on-site operations. With the exception of hydrofluoric acid, no evidence exists that these compounds were ever released or disposed of on the property.

# SI TABLE 3: WASTE CHARACTERIZATION WORKSHEET

(Continued)

Sources:  
1. Other  
3. Contaminated Soil  
5. Drums

4. Drums  
6. Tanks  
7. Tanks

Source	Hazardous Substance	Toxicity	SURFACE WATER PATHWAY				AIR PATHWAY		
			GROUNDWATER TO SURFACE WATER				Gaseous/ Particulate (HRS Table 6-13) (indicate G or P)	Mobility (HRS Table 6-11,6-12)	Tox. x Mob. Value (HRS Table 6-13)
			Tox. x Mob. x Pers. Value (HRS Table 4-26)	Tox. x Mob. x Pers. x Bioacc. Value (HRS Table 4-28)	Ecotox. x Mob. x Pers. Value (HRS Table 4-29)	Ecotox. x Mob. x Pers. x Ecobioacc. Value (HRS Table 4-29)			
*	Acetone	10	4	2	40	20	G	1	10
3	Aluminum	NL	--	--	0.01	0.5	P	8E-05	--
*	Ammonium Bifluoride	NL	NL	NL	NL	NL	NL	NL	NL
3	Dichlorobenzene, 1,4-	10	4	200	40	2,000	G	1	10
3	Dichloroethylene, 1,1-	100	40	2,000	4	300	G	1	100
3	Dichloroethylene, cis-1,2-	100	40	200	--	--	G	--	100
3	Dichloroethylene, trans-1,2-	100	40	2,000	0.4	20	G	1	100
*	Hydrochloric acid	100	40	20	0.4	0.2	G	1	100
1,*	Hydrofluoric acid	NL	NL	NL	NL	NL	NL	NL	NL
*	Methyl ethyl ketone (MEK)	10	4	2	0.4	0.2	G	1	10
*	Nitric acid	10	4	2	--	--	G	1	10
*	Phosphoric acid	1,000	400	2E+06	--	--	P	2E-04	--
*	Sodium hydroxide	NL	NL	NL	NL	NL	NL	NL	NL
*	Sulfuric acid	1,000	400	200	4	2	G/P	0.02	20
3	Tetrachloroethane, 1,1,1,2-	100	40	2,000	4	200	G	1	100
3	Tetrachloroethylene	100	40	2,000	40	2,000	G	1	100
*	Titanium	NL	NL	NL	NL	NL	NL	NL	NL
3	Trichloroethane, 1,1,1-	1	0.4	2	4	20	G	1	1



# SI TABLE 3: WASTE CHARACTERIZATION WORKSHEET

(Continued)

Sources:  
1. Other  
3. Contaminated Soil  
5. Drums

4. Drums  
6. Tanks  
7. Tanks

Source	Hazardous Substance	Toxicity	SURFACE WATER PATHWAY				AIR PATHWAY		
			GROUNDWATER TO SURFACE WATER				Gaseous/ Particulate (HRS Table 6-13) (indicate G or P)	Mobility (HRS Table 6-11,6-12)	Tox. x Mob. Value (HRS Table 6-13)
			Tox. x Mob. x Pers. Value (HRS Table 4-26)	Tox. x Mob. x Pers. x Bioacc. Value (HRS Table 4-28)	Ecotox. x Mob. x Pers. Value (HRS Table 4-29)	Ecotox. x Mob. x Pers. x Ecobioacc. Value (HRS Table 4-29)			
3	Trichloroethane, 1,1,2-	1,000	400	20,000	4	200	G	1	1,000
3,6	Trichloroethylene	10	4	200	40	2,000	G	1	10
*	Xylene, p- (also use for total)	10	4	200	40	2,000	G	1	10

## NOTES:

SCDM Version: JUN96

SI Table 3 assumptions: liquid-phase waste disposed of in non-karst terrane, fresh-water river environment values.

\*Indicated compounds were used on the property during Metal Testing Company on-site operations. With the exception of hydrofluoric acid, no evidence exists that these compounds were ever released or disposed of on the property.

## GROUNDWATER PATHWAY

**Pathway Description and Scoring Notes:** Describe the Groundwater Migration Pathway. Include the names and brief descriptions of the aquifers underlying the site, the depth to groundwater, the locations of the nearest private and public drinking water supplies and the aquifers from which they draw, and the population relying upon groundwater drawn from within 4-radial miles of the site for their drinking water supplies.

Briefly discuss any sampling events relative to the Groundwater Pathway; provide dates of sampling events and a summary of the analytical results and whether an observed release and/or actual contamination targets were documented.

Indicate any assumptions you have made in scoring the Groundwater Pathway for this site, or any key factors which influence your scoring rationale.

Soils in the vicinity of the property have been characterized as Ninigret fine sandy loam and Walpole sandy loam. The Ninigret fine sandy loam is described as consisting of a light fine sandy loam and sandy loam surface soil and upper subsoil developed from bedrock, glaciofluvial, glaciolacustrine, and stream terrace deposits. Unsaturated Ninigret fine sandy loam is further described as having rapid permeability. The Walpole sandy loam is described as consisting of coarse-to-medium textured, poorly drained soils developed from sandy and gravelly terrace deposits. Soils of this type have been characterized as having very slow runoff and slow internal drainage. The specific depth to bedrock below the property is unknown. Bedrock in the region of the property has been described as consisting of the reddish brown-to-gray Portland Arkose formation. No bedrock formations mapped within 4-radial miles of the property exhibit karst characteristics [5].

According to the CEE environmental survey, the property overlies a fine grained stratified drift aquifer. During the installation of the on-site monitoring wells, CEE personnel observed that the upper 15 feet of the aquifer was generally made up of fine-to-coarse sand and some gravel of glaciofluvial and fluvial origin. Well yields in this material may exceed 400 gallons per minute. Wells screened in the underlying material comprised of fine grained sediments (very fine sand, silt, and clay) generally yield less than 10 gallons per minute [5].

Groundwater below the property is generally encountered at depths ranging from 3 to 5 feet below grade. The natural groundwater flow direction is towards the south-southwest. However, when the groundwater pump and treat remediation system is active, groundwater flow is redirected towards the recovery well. The 1994 PA reported the following aquifer characteristics: a transmissivity of 1,000 gallons per day per foot, a saturated thickness of 8 feet, and a hydraulic conductivity of 190 gallons per day per square-foot [4;5].

The property is located in an area where the CT DEP classifies groundwater as GA. This designation (GA) indicates that groundwater is within the area of influence of private and potential public water supply wells and is presumed suitable for human consumption without need for treatment. The CT DEP goal is to maintain the groundwater classification of GA for this area [4].

## GROUNDWATER PATHWAY (Continued)

The mean annual rate of precipitation for Brainard Airport in Hartford, Connecticut, located approximately 9 miles southwest of the property, is 42.77 inches. START personnel assume for this evaluation that 42.77 inches of rain per year is representative of the precipitation rate for the property [10].

The exact location of the nearest private drinking water well could not be determined by START personnel. According to the 1994 PA, the nearest private well is located approximately 2,250 feet north of the property along Troy Road. However, START personnel could not determine the specific address or current status of the well. According to the CENTRACTS report for the property, there are approximately 34 people utilizing private groundwater sources within 0.25-radial miles of the property, and 427 people utilizing private groundwater sources within 1-radial mile of the property [4;8]. The groundwater population identified in the CENTRACTS report will be utilized for this evaluation.

The nearest municipal well is the public supply well operated by the Hillsdale Water Company. This well is located approximately 1.33 miles southeast of the property and serves approximately 31 people in South Windsor. An estimated 5,133 people obtain their drinking water from municipal wells located within 4-radial miles of the property. The following tables summarize groundwater sources, usage, and populations for drinking water within 4-radial miles of the property [11;12].

**Public Groundwater Supply Sources Within 4-Radial Miles of  
Metals Testing Company (Former).**

Distance/ Direction from Site	Source Name	Location of Source <sup>a</sup>	Estimated Population Served	Source Type <sup>b</sup>
1.33 miles/ southeast	Hillsdale Water Co.	South Windsor	31	Unknown
3.5 miles/ northeast	Windsorville Water Co.	East Windsor	33	Unknown
3.6 miles/ southeast	Pine Knob Well	South Windsor	3,864	Unknown
3.69 miles/ southeast	Woodland Park Well	South Windsor	502	Unknown
3.88 miles/ southeast	Avery Heights Water Association	South Windsor	703	Unknown

<sup>a</sup> Indicates Town in which well is located.

<sup>b</sup> Overburden, Bedrock, or Unknown.

[11;12]



## GROUNDWATER PATHWAY (Continued)

### Estimated Drinking Water Populations Served by Groundwater Sources Within 4-Radial Miles of Metals Testing Company (Former).

Radial Distance From Metals Testing Company (Former) (miles)	Estimated Population Served by Private Wells	Estimated Population Served by Public Wells	Total Estimated Population Served by Groundwater Sources Within the Ring
0.00 < 0.25	34	0	34
0.25 < 0.50	92	0	92
0.50 < 1.00	301	0	301
1.00 < 2.00	1,668	31	1,699
2.00 < 3.00	1,837	0	1,837
3.00 < 4.00	2,235	5,102	7,337
TOTAL	6,167	5,133	11,300

[8;12]

As previously mentioned, five groundwater monitoring wells were observed by START personnel during the on-site reconnaissance. Three overburden groundwater monitoring wells (CEE-1, CEE-2, and CEE-3) were installed on 16 April 1990 by General Boring, Inc. Groundwater samples were collected from these wells and sent to Averill Environmental Laboratory for TPH and halogenated VOC analyses. Results of these analyses indicated the presence of five VOCs which could be directly attributed to the property in one or more of the groundwater samples. Detected concentrations ranged from 5.9 to 5,500 ppb [5]. START personnel chose monitoring well CEE-2 as the reference well due to its crossgradient location and uncontaminated condition.

Due to the detection of TCE in the April 1990 groundwater samples, MTC notified the CT DEP on 30 April 1990 of a release of approximately 30 gallons of TCE. The exact date of the release was not indicated [4].

On 4 June 1990, General Boring, Inc. installed two additional monitoring wells (CEE-4 and CEE-5) on the property. On 11 June 1990, groundwater samples were collected from the three previously installed wells and the two newly installed wells. Groundwater samples were analyzed by an unknown laboratory for halogenated VOCs. The five previously detected VOCs were still present in the groundwater sample from monitoring well CEE-1. In addition, a previously non-detected halogenated VOC (1,1,2-trichloroethane) was found to be present in the June 1990 groundwater sample collected from monitoring well CEE-1 [4;13].

## GROUNDWATER PATHWAY (Continued)

As a result of the detection of halogenated VOCs in the groundwater below the property, a groundwater remediation system was designed. The remediation system consisted of a surface-mounted pump operated via a float switch and a shallow tray aeration system capable of removing approximately 99% to 100% of the TCE from the recovered groundwater [13].

On 15 November 1990, Kennedy Drilling, Inc. installed two 4-inch recovery wells (RW-1 and RW-2) on the property. RW-2 was installed at the time to extract contaminated groundwater for the groundwater remediation system. RW-1 was installed at the time for possible future treatment of contaminated groundwater [13].

The analysis of the quarterly groundwater samples collected on 29 October 1991 from the monitoring and recovery wells on the property indicated the detection of a previously non-detected compound. 1,2-Dichloroethylene was detected at 53 ppb in the sample collected from monitoring well CEE-1.

At some point between 29 April 1994 and 11 September 1995, the groundwater treatment system was disconnected from recovery well RW-2 and connected to recovery well RW-1. This was due to the decreased levels of halogenated VOCs in groundwater recovered from recovery well RW-2. Environmental Services of America, Inc. (ENSA), the environmental consultant for MTC at the time the recovery wells were transferred, theorized that a cone of influence from recovery well RW-1 would pull contaminated groundwater from the center of the plume below the property [14].

Groundwater beneath the property continues to be sampled quarterly. The most current groundwater sampling analytical data that START personnel were able to review summarized groundwater samples collected from the property on 17 December 1996 and 29 January 1997. This data indicated that TCE concentrations in the groundwater below the property continue to range from 3.6 to 96 ppb [9].

**SI TABLE 4: GROUNDWATER OBSERVED RELEASE SUBSTANCES (BY AQUIFER)**

Note: Mobility equals 1 for all observed release substances.

Sample ID	Hazardous Substance	Substance Concentration	Bckgrd. ID.	Bckgrd. Conc.	Tox. × Mob. = Tox.	References
CEE-1 (4/90)	1,1,1,2-tetrachloroethane	10 ppb	CEE-2 (4/90)	ND (1 ppb)	100	5
CEE-1 (4/90)	Tetrachloroethylene	31 ppb	CEE-2 (4/90)	ND (1 ppb)	100	5
CEE-1 (4/90)	Trichloroethylene	5,500 ppb	CEE-2 (4/90)	ND (1 ppb)	10	5
CEE-1 (6/90)	1,1-dichloroethylene	6.0 ppb	CEE-2 (6/90)	ND (NA)	100	5
CEE-1 (10/91)	1,2-dichloroethylene*	53 ppb	CEE-2 (10/91)	ND (NA)	100	
CEE-1 (4/90)	1,1,1-trichloroethane*	220 ppb	CEE-2 (4/90)	ND (1 ppb)	1	
CEE-1 (6/90)	1,1,2-trichloroethane	120 ppb	CEE-2 (6/90)	ND (NA)	1000	5
Highest Value					1000	

Notes: ND = Not detected. The reference sample's detection limit for the specific compounds are indicated in parentheses.

NA = Not available.

Compounds listed have been detected in multiple rounds of groundwater sampling from the property. The concentrations listed are the maximum concentrations detected to date.

\* Indicated compounds were detected in groundwater samples collected from the property. The compounds were not detected in the March 1990 soil samples collected from the property and also are not associated with MTC on-site operations. The indicated compounds are considered breakdown products of 1,1,1,2-trichloroethane, trichloroethylene, and tetrachloroethylene.

**SI TABLE 5: GROUNDWATER ACTUAL CONTAMINATION TARGETS**

Notes: Convert all results and SCDM values to ppb or µg/L.

If sum of percents calculated for I or J index is ≥ 100%, consider the well a Level I target; if sum of I or J index is < 100%, consider the well a Level II target.

Well ID:		Level I:		Level II:		Population Served:		References:	
Sample ID	Hazardous Substance	Conc. (µg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	RfD (J Index)	% of RfD	Cancer Risk Conc. (I index)	% of Cancer Risk Conc.	
Highest Percent					Sum of Percents		Sum of Percents		

SCDM Version: June 1996

Notes: There are no known groundwater actual contamination targets associated with the property.

## GROUNDWATER PATHWAY WORKSHEET

### LIKELIHOOD OF RELEASE

		Score	Data Type	Refs
1.	<b>OBSERVED RELEASE:</b> If sampling data or direct observation support a release to the aquifer, assign a score of 550. Record observed release substances on SI Table 4.	550	+	5
2.	<b>POTENTIAL TO RELEASE:</b> Depth to aquifer: _____ feet. If sampling data do not support a release to the aquifer, and the site is in karst terrain or the depth to aquifer is 70 feet or less, assign a score of 500; otherwise, assign a score of 340. Optionally, evaluate potential to release according to HRS Section 3.1.2.			

LR = 550

### TARGETS

		Score	Data Type	Refs
	Are any wells part of a blended system? Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> If yes, attach a page to show apportionment calculations.			
3.	<b>ACTUAL CONTAMINATION TARGETS:</b> If analytical evidence indicates that any target drinking water well for the aquifer has been exposed to a hazardous substance from the site, evaluate the factor score for the number of people served (SI Table 5).  Level I: $\frac{0 \text{ people} \times 10}{0 \text{ people} \times 1} = \frac{0}{0}$ Level II: $\frac{0 \text{ people} \times 1}{0 \text{ people} \times 1} = \frac{0}{0}$ <b>Total =</b>	0	-	4
4.	<b>POTENTIAL CONTAMINATION TARGETS:</b> Determine the number of people served by drinking water wells for the aquifer or overlying aquifers that are not exposed to a hazardous substance from the site; record the population for each distance category in SI Table 6a or 6b. Sum the population values and multiply by 0.1.	117.6	+	8;12
5.	<b>NEAREST WELL:</b> Assign a score of 50 for any Level I Actual Contamination Targets for the aquifer or overlying aquifer. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Targets exist, assign the Nearest Well Score from SI Table 6a or 6b. If no drinking water wells exist within 4 miles, assign 0.	20	-	4
6.	<b>WELLHEAD PROTECTION AREA (WHPA):</b> If any source lies within or above a WHPA for the aquifer, or if a groundwater observed release has occurred within a WHPA, assign a score of 20; assign 5 if neither condition applies but a WHPA is within 4 miles; otherwise assign 0.	5	+	12
7.	<b>RESOURCES:</b> Assign a score of 5 if one or more groundwater resource applies; assign 0 if none applies. <ul style="list-style-type: none"> <li>Irrigation (5 acre minimum) of commercial food crops or commercial forage crops</li> <li>Watering of commercial livestock</li> <li>Ingredient in commercial food preparation</li> <li>Supply for commercial aquaculture</li> <li>Supply for a major or designated water recreation area, excluding drinking water use</li> </ul>	5	-	3
<b>Sum of Targets T =</b>		147.6		

Notes: Resources are assumed.



**SI TABLE 6 (FROM HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUNDWATER  
TARGET POPULATIONS**

**SI Table 6a: Other Than Karst Aquifers**

Distance From Site	Pop.	Nearest Well (choose highest)	POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORY												Pop. Value	Ref.
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000		
0 to 1/4 mile	34	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	53	8;12
> 1/4 to 1/2 mile	92	18	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122	33	8;12
> 1/2 to 1 mile	301	9	1	5	17	52	167	523	1,669	5,224	16,684	52,239	166,835	522,385	167	8;12
> 1 to 2 miles	1,699	5	0.7	3	10	30	94	294	939	2,939	9,385	29,384	93,845	293,842	294	8;12
> 2 to 3 miles	1,837	3	0.5	2	7	21	68	212	678	2,122	6,778	21,222	67,777	212,219	212	8;12
> 3 to 4 miles	7,337	2	0.3	1	4	13	42	131	417	1,306	4,171	13,060	41,709	130,596	417	8;12
Nearest Well =		18	Sum =												1,176	

Notes:

**SI TABLE 6 (FROM HRS TABLE 3-12): VALUES FOR POTENTIAL CONTAMINATION GROUNDWATER  
TARGET POPULATIONS (Continued)**

**SI Table 6b: Karst Aquifers**

Distance From Site	Pop.	Nearest Well (choose highest)	POPULATION SERVED BY WELLS WITHIN DISTANCE CATEGORY												Pop. Value	Ref.
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1000	1001 to 3000	3001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,000 to 3,000,000		
0 to 1/4 mile	0	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	0	4
> 1/4 to 1/2 mile	0	20	2	11	33	102	324	1,013	3,233	10,122	32,325	101,213	323,243	1,012,122	0	4
> 1/2 to 1 mile	0	20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227	0	4
> 1 to 2 miles	0	20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227	0	4
> 2 to 3 miles	0	20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227	0	4
> 3 to 4 miles	0	20	2	9	26	82	261	817	2,607	8,163	26,068	81,623	260,680	816,227	0	4
Nearest Well =		0													Sum =	
															0	

Notes:

## GROUNDWATER PATHWAY WORKSHEET (Concluded)

### WASTE CHARACTERISTICS

	Score	Data Type	Does Not Apply																																	
<p>8. If any Actual Contamination Targets exist for the aquifer or overlying aquifers, assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; if no Actual Contamination Targets exist, assign the hazardous waste quantity score calculated for sources available to migrate to groundwater.</p>	10																																			
<p>9. Assign the highest groundwater toxicity × mobility value from SI Table 3 or 4.</p> <p>Substance(s): <u>1,1,2-trichloroethane</u> <u>Phosphoric Acid</u> <u>Sulfuric Acid</u></p> <p>Value: <u>1,000</u> <u>1,000</u> <u>1,000</u></p> <p>From Table: <u>4</u> <u>3</u> <u>3</u></p>																																				
<p>10. Multiply the groundwater toxicity × mobility and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below: (from HRS Table 2-7)</p> <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th>Product</th> <th>WC Score</th> <th>*</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td></td></tr> <tr><td>&gt;0 to &lt;10</td><td>1</td><td></td></tr> <tr><td>≥10 to &lt;100</td><td>2</td><td></td></tr> <tr><td>≥100 to &lt;1,000</td><td>3</td><td></td></tr> <tr><td>≥1,000 to &lt;10,000</td><td>6</td><td></td></tr> <tr><td>≥10,000 to &lt;1E+05</td><td>10</td><td></td></tr> <tr><td>≥1E+05 to &lt;1E+06</td><td>18</td><td></td></tr> <tr><td>≥1E+06 to &lt;1E+07</td><td>32</td><td></td></tr> <tr><td>≥1E+07 to &lt;1E+08</td><td>56</td><td></td></tr> <tr><td>≥1E+08 or greater</td><td>100</td><td></td></tr> </tbody> </table> <p>*check (✓) the WC score calculated for the pathway</p>	Product	WC Score	*	0	0		>0 to <10	1		≥10 to <100	2		≥100 to <1,000	3		≥1,000 to <10,000	6		≥10,000 to <1E+05	10		≥1E+05 to <1E+06	18		≥1E+06 to <1E+07	32		≥1E+07 to <1E+08	56		≥1E+08 or greater	100		10,000		
Product	WC Score	*																																		
0	0																																			
>0 to <10	1																																			
≥10 to <100	2																																			
≥100 to <1,000	3																																			
≥1,000 to <10,000	6																																			
≥10,000 to <1E+05	10																																			
≥1E+05 to <1E+06	18																																			
≥1E+06 to <1E+07	32																																			
≥1E+07 to <1E+08	56																																			
≥1E+08 or greater	100																																			
WC =	10																																			

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the groundwater pathway score for each aquifer. Select the highest aquifer score. If the pathway score is greater than 100, assign 100.

**GROUNDWATER PATHWAY CALCULATION:**

$$\frac{LR \times T \times WC}{82,500} = \boxed{9.84}$$

(Maximum of 100)

Notes:

Calculations:  $(550 \times 147.6 \times 10) \div 82,500 = 9.84$

## SURFACE WATER PATHWAY

**Pathway Description and Scoring Notes:** Describe the Surface Water Migration Pathway. Identify the nearest source area with non-zero containment for the Surface Water Pathway and the location of the PPE. Include the length of the overland segment. Describe the in-water segment up to the target distance limit noting the stream flow characteristics of each reach and the locations of drinking water intakes, fisheries and sensitive environments along the 15-mile pathway.

Briefly discuss any sampling events relative to the Surface Water Pathway; provide dates of sampling events and a summary of the analytical results and whether an observed release and/or actual contamination targets were documented.

Indicate any assumptions you have made in scoring the Surface Water Pathway for this site, or any factors which influenced your scoring rationale.

Note: If a site has more than one watershed or has both overland/flood and groundwater to surface water migration potential, document each scenario and use the higher scoring watershed/migration route to calculate the surface water migration pathway score. Provide a summary of the scores for all other watershed/migration routes.

According to the 1994 PA prepared by the CT DEP, there are two possible probable point of entry (PPE) areas, as well as two separate 15-mile downstream pathways (downstream pathway) for the property [4].

The 1994 PA indicated that the first downstream pathway involves overland flow to the northern side of the property to a series of storm drains which ultimately discharge to an unnamed intermittent stream. This intermittent stream flows to the first PPE at the Scantic River. The overland distance between the property and the Scantic River is approximately 1.4 miles. This downstream pathway then continues along the Scantic River for approximately 2 miles, at which point the Scantic River converges with the Connecticut River. The 15-mile terminus for the first downstream pathway is then reached at Keeney Cove in Glastonbury, Connecticut after approximately 13 miles of flow along the Connecticut River [4;15].

The 1994 PA indicated that the second possible downstream pathway involves overland flow to the southern portion of the property and interception by another network of storm drains. These storm drains flow via an intermittent swale system to the second PPE area at Bancroft Brook. The overland segment prior to Bancroft Brook for the second downstream pathway is approximately 0.5 miles. The second downstream pathway includes flow along Bancroft Brook for approximately 1.8 miles to its convergence with Stoughton Brook. This downstream pathway then continues along Stoughton Brook for approximately 0.8 miles until its convergence with the Connecticut River. The 15-mile terminus for the second downstream pathway is reached at Crow Point in Wethersfield, Connecticut after approximately 12.4 miles of flow along the Connecticut River [4;15].

The Scantic River is classified as a Class B waterbody. Class B waterbodies are known or presumed to meet water quality criteria which support designated uses. Designated uses for Class B waterbodies include recreational use, fish and wildlife habitat, agricultural and industrial supply, and other legitimate uses including navigation. Bancroft Brook is classified as a Class B/A waterbody. Class B/A waterbodies may not be meeting Class A water quality criteria or one or more designated uses. Designated uses for Class A waterbodies include potential drinking water supply, fish and wildlife habitat, recreational use, agricultural and industrial supply, and other legitimate uses including navigation.



## SURFACE WATER PATHWAY (Continued)

The Connecticut River is classified as a Class SC/SB waterbody. Class SC/SB waterbodies are presently not meeting water quality criteria or one or more designated uses of a Class SB waterbody due to pollution. The goal for such waters may be Class SA or SB depending upon the specific designated uses. Designated uses for a Class SB waterbody include marine fish, shellfish, and wildlife habitat, recreation, industrial and other legitimate uses including navigation [23]. Surface water classification for Stoughton Brook was unavailable.

The property is generally flat with a slight grade towards Sullivan Avenue. During the START on-site reconnaissance on 29 May 1997, it was observed that the downstream pathway which includes the Bancroft and Stoughton Brooks and the Connecticut River is the more probable downstream pathway for the property. The downstream pathway that includes flow along the Scantic River and the Connecticut River will not be evaluated further in this report [3].

The mean annual flow rate of Bancroft Brook was determined to be 4.5 cubic feet per second (cfs). The mean annual flow rate for Stoughton Brook was determined to be 8.1 cfs. START personnel determined these flow rates by measuring the drainage basins of each brook (measured in square miles) and multiplying by a correction factor of 1.8 to arrive at the previously mentioned flow rates. The mean annual flow rate of the Connecticut River was determined to be 18,877 cfs. START personnel obtained an area of 10,487 square miles for the Connecticut River drainage basin from the *Water Resource Data Connecticut - Water Year 1994* publication, published by the U.S. Geological Survey. The drainage basin area (measured in square miles) was then multiplied by a correction factor of 1.8 to arrive at the previously mentioned flow rate [16].

Surface water bodies comprising the downstream pathway for the property are summarized in the following table.

**Water Bodies Along the 15-Mile Downstream Pathway from  
Metals Testing Company (Former)**

Surface Water Body	Descriptor <sup>a</sup>	Length of Reach (miles)	Flow Characteristics (cfs) <sup>b</sup>	Length of Wetlands (miles)
Bancroft Brook	Minimal Stream	1.8	4.5	1.36
Stoughton Brook	Minimal Stream	0.8	8.1	0.19
Connecticut River	Large River	12.4	18,877	8.64

<sup>a</sup> Minimal stream < 10 cfs. Small to moderate stream 10-100 cfs. Moderate to large stream > 100-1,000 cfs. Large stream to river > 1,000-10,000 cfs. Large river > 10,000-100,000 cfs. Very large river > 100,000 cfs. Coastal tidal waters (flow not applicable). Shallow ocean zone or Great Lake (flow not applicable). Moderate depth ocean zone or Great Lake (flow not applicable). Deep ocean zone or Great Lake (flow not applicable). Three-mile mixing zone in quiet flowing river 10 cfs or greater.  
<sup>b</sup> Cubic feet per second.

[16;17]

## SURFACE WATER PATHWAY (Continued)

There are no known drinking water intakes located along the downstream surface water pathway for the property. There are approximately 1.36 miles of wetlands frontage along Bancroft Brook, approximately 0.19 miles of wetlands frontage along Stoughton Brook, and approximately 8.64 miles of wetlands frontage along the Connecticut River. START personnel were unable to obtain any information verifying that Bancroft and Stoughton Brooks were fisheries; however, for this evaluation, START personnel will assume that the two brooks are recreational fisheries. The Connecticut River is a known recreational fishery. The only additional sensitive environment information that START personnel were able to obtain from CT DEP concerning the downstream pathway for the property indicates that the Connecticut River is potential habitat for one Federal endangered species, the Atlantic Sturgeon [15;17;18].

Sensitive environments located along the downstream pathway for the property are summarized in the following table.

**Sensitive Environments Along the 15-Mile Downstream Pathway from  
Metals Testing Company (Former)**

Sensitive Environment Name	Sensitive Environment Type	Water Body	Downstream Distance from PPE (miles)	Flow Rate at Environment (cfs) <sup>a</sup>
CWA Water body	CWA Water body	Bancroft Brook	0.1	4.5
Wetlands	Wetlands	Bancroft Brook	0.75	4.5
Wetlands	Wetlands	Stoughton Brook	1.9	8.1
Wetlands	Wetlands	Connecticut River	2.6	18,877
Fed. Endg. Species.	Fed. Endg. Species	Connecticut River	2.6	18,877

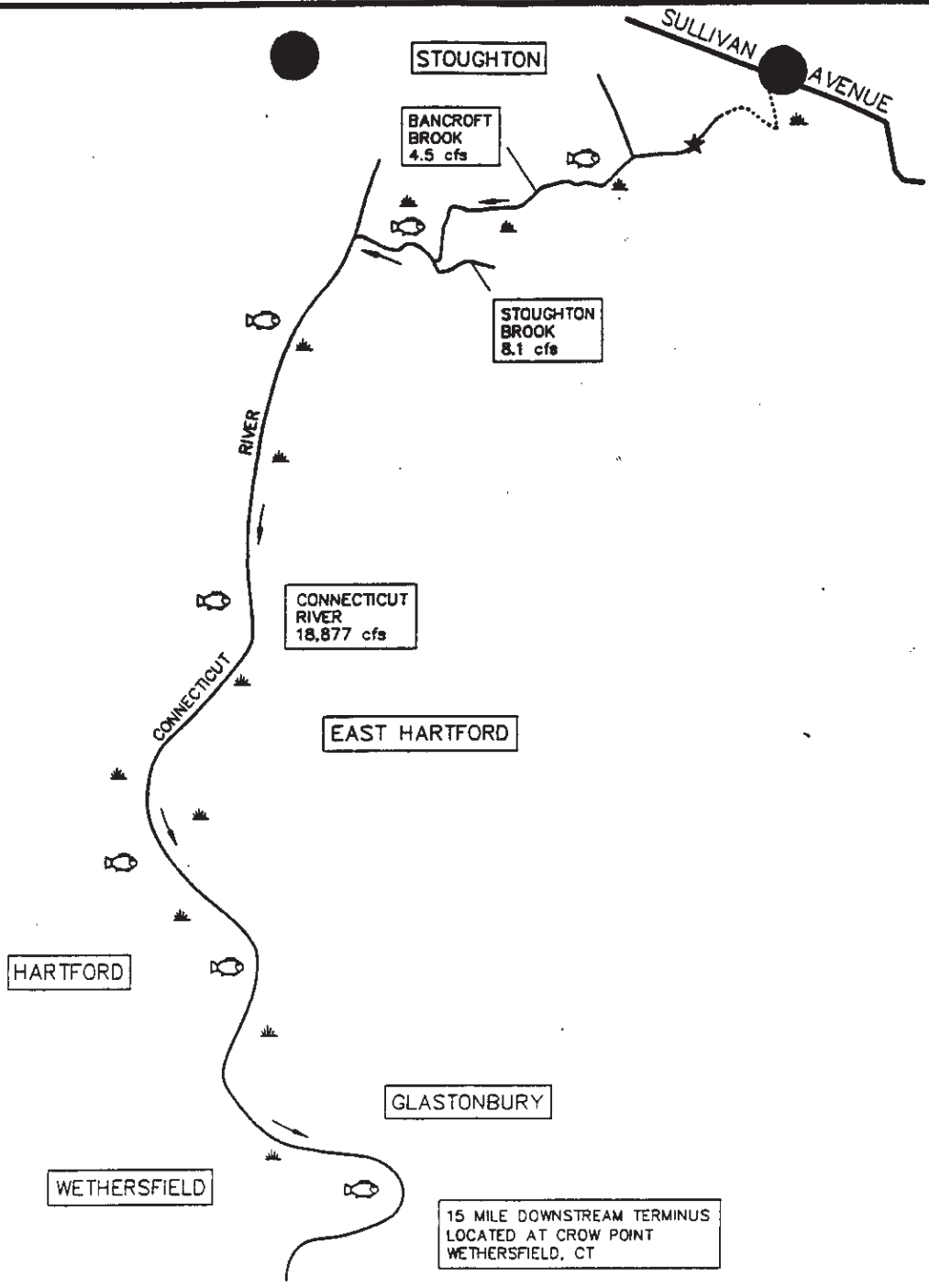
<sup>a</sup> Cubic feet per second

CWA = Clean Water Act

Fed. Endg. = Federal Endangered

[17;18]

On 5 April 1994, the CT DEP completed a PA of the property. No environmental samples were collected as part of the 1994 PA [4]. The PA indicated that MTC had received a written Order (No. WC-2592) dated October 1979 from the Water Compliance Unit of CT DEP in regards to the discharge of film processing wastewater to an unnamed stream adjacent to the building MTC was occupying. START personnel verified that MTC was not operating at the 570 Sullivan Avenue property in 1979 and determined that Order No. WC-2592 does not apply to the 570 Sullivan Avenue property. No further mention of the discharging of film processing wastewater will be made in this evaluation [4].



NOT TO SCALE

**LEGEND**

- WETLANDS
- PROBABLE POINT OF ENTRY TO SURFACE WATER
- FISHERY
- FLOW DIRECTION
- cfs CUBIC FEET PER SECOND
- PROPERTY
- DRAINAGE SWALE

SOURCE: U.S.G.S. QUADRANGLE(S): WINDSOR LOCKS, CT  
MANCHESTER, CT  
BROAD BROOK, CT  
HARTFORD NORTH, CT  
HARTFORD SOUTH, CT  
GLASTONBURY, CT

**SURFACE WATER PATHWAY**

METALS TESTING COMPANY (FORMER)  
570 SULLIVAN AVENUE  
SOUTH WINDSOR, CONNECTICUT



REGION I SUPERFUND TECHNICAL ASSESSMENT AND RESPONSE TEAM

TOD # 97-02-0009	DRAWN BY: W. SHAW	DATE 7/7/97
---------------------	----------------------	----------------

FILE NAME: S:\97020009\FIG3.DWG	FIGURE 3
------------------------------------	----------

**SI TABLE 7: SURFACE WATER OBSERVED RELEASE SUBSTANCES**

List all substances that meet the criteria for an observed release to surface water; however do not eliminate a substance from this table if it has a BCF of less than 500.

[illegible]

Notes: There are no known surface water observed release substances associated with the property.

**SI TABLE 8: SURFACE WATER DRINKING WATER ACTUAL CONTAMINATION TARGETS**

Notes: Convert all results and SCDM values to ppb or  $\mu\text{g/L}$ .  
If sum of percents calculated for I or J index is  $\geq 100$  percent, consider the intake a Level I target; if sum of I or J index is  $< 100$  percent consider the intake a Level II target.

Intake ID:      Sample Type:      Level I:      Level II:      Population Served:      References:

Sample ID	Hazardous Substance	Conc. (µg/L)	Benchmark Conc. (MCL or MCLG)	% of Benchmark	RfD (J Index)	% of RfD	Cancer Risk Conc. (I index)	% of Cancer Risk Conc.
Highest Percent					Sum of Percents		Sum of Percents	

SCDM Version: June 1996

Notes: There are no known surface water drinking water actual contamination targets associated with the property.



# SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET

## LIKELIHOOD OF RELEASE - OVERLAND/FLOOD MIGRATION

	Score	Data Type	Refs
1. <b>OBSERVED RELEASE:</b> If sampling data or direct observation support a release to surface water in the watershed, assign a score of 550. Record observed release substances on SI Table 7.	0		
2. <b>POTENTIAL TO RELEASE:</b> Distance to surface water: <u>2,640</u> (feet) If sampling data do not support a release to surface water in the watershed, use the table below to assign a score from the table below based on distance to surface water and flood frequency.			

Distance to surface water < 2500 feet	500
Distance to surface water > 2500 feet, and:	
Site in annual or 10-yr floodplain	500
Site in 100-yr floodplain	400
Site in 500-yr floodplain	300
Site outside 500-yr floodplain	100

Optionally, evaluate surface water potential to release according to HRS Section 4.1.2.1.2

LR =

## LIKELIHOOD OF RELEASE - GROUNDWATER TO SURFACE WATER MIGRATION

	Score	Data Type	Refs
1. <b>OBSERVED RELEASE:</b> If sampling data or direct observation support a release to surface water in the watershed, assign a score of 550. Record observed release substances on SI Table 7.			
NOTE: Evaluate groundwater to surface water migration only for a surface water body that meets all of the following conditions:			
1) A portion of the surface water is within 1 mile of site sources having a containment factor greater than 0.			
2) No aquifer discontinuity is established between the source and the above portion of the surface water body.			
3) The top of the uppermost aquifer is at or above the bottom of the surface water. Elevation of top of uppermost aquifer: _____ Elevation of bottom of surface water body: _____			
2. <b>POTENTIAL TO RELEASE:</b> Depth to aquifer: <u>3-5</u> feet. If sampling data do not support a release to the aquifer, and the site is in karst terrain or the depth to aquifer is 70 feet or less assign a score of 500; otherwise assign a score of 340. Optionally, evaluate potential to release according to HRS Section 3.1.2.	500	-	5

LR = 500

Notes: Alternate Scenario

If sediment sampling were to be conducted and sampling documented an Observed Release, LR = 550.

# SURFACE WATER PATHWAY LIKELIHOOD OF RELEASE AND DRINKING WATER THREAT WORKSHEET (Continued)

## DRINKING WATER THREAT TARGETS

Record the water body type, flow, and number of people served by each drinking water intake within the distance limit in the watershed. If there is no drinking water intake within the target distance limit, assign 0 to factors 3, 4, and 5.

Intake Name	Water Body Type	Flow	People Served

Are any intakes part of a blended system? Yes ☐ No ☒  
If yes, attach a page to show appointment calculations.

3. ACTUAL CONTAMINATION TARGETS: If analytical evidence indicates a drinking water intake has been exposed to a hazardous substance from the site, list the intake name and evaluate the factor score for the drinking water population (SI Table 8).

Level I: 0 people  $\times 10 =$  0

Level II: 0 people  $\times 1 =$  0

Total =

0

-

19

4. POTENTIAL CONTAMINATION TARGETS: Determine the number of people served by drinking water intakes for the watershed that have not been exposed to a hazardous substance from the site. Assign the population values from SI Table 9. Sum the values and multiply by 0.1.

0

-

19

5. NEAREST INTAKE: Assign a score of 50 for any Level I Actual Contamination Drinking Water Targets for the watershed. Assign a score of 45 if there are Level II targets for the watershed, but no Level I targets. If no Actual Contamination Drinking Water Targets exist, assign a score for the intake nearest the PPE from SI Table 9. If no drinking water intakes exist, assign 0.

0

-

19

6. RESOURCES: Assign a score of 5 if one or more surface water resource applies; assign 0 if none applies.

- Irrigation (5-acre minimum) of commercial food crops or commercial forage crops
- Watering of commercial livestock
- Ingredient in commercial food preparation
- Major or designated water recreation area, excluding drinking water use.

5

-

19

Sum of Targets T =

5

Notes: Resources are assumed.

**SI TABLE 9 (FROM HRS TABLE 4-14): DILUTION-WEIGHTED POPULATION VALUES FOR POTENTIAL CONTAMINATION FOR SURFACE WATER MIGRATION PATHWAY<sup>(a)</sup>**

Type of Surface Water Body <sup>(a)</sup>	Pop.	Nearest Intake	NUMBER OF PEOPLE								Pop. Value
			1 to 10	11 to 20	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	
Minimal Stream (<10 cfs)	0	20	4	17	53	164	522	1,633	5,214	16,325	0
Small to moderate stream (10 to 100 cfs)	0	2	0.4	2	5	16	52	163	521	1,633	0
Moderate to large stream (> 100 to 1,000 cfs)	0	0	0.04	0.2	0.5	2	5	16	52	163	0
Large Stream to river (> 1,000 to 10,000 cfs)	0	0	0.004	0.02	0.05	0.2	0.5	2	5	16	0
Large River (> 10,000 to 100,000 cfs)	0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	2	0
Very Large River (> 100,000 cfs)	0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	0
Shallow ocean zone or Great Lake (depth < 20 feet)	0	0	0	0.002	0.005	0.02	0.05	0.2	0.5	2	0
Moderate ocean zone or Great Lake (Depth 20 to 200 feet)	0	0	0	0	0.001	0.002	0.005	0.02	0.05	0.2	0
Deep ocean zone or Great Lake (depth > 200 feet)	0	0	0	0	0	0.001	0.003	0.008	0.03	0.08	0
3-mile mixing zone in quiet flowing river ( $\geq$ 10 cfs)	0	10	2	9	26	82	261	817	2,607	8,163	0

**SI TABLE 9 (FROM HRS TABLE 4-14): DILUTION-WEIGHTED POPULATION VALUES FOR POTENTIAL CONTAMINATION FOR SURFACE WATER MIGRATION PATHWAY<sup>(a)</sup> (Continued)**

Type of Surface Water Body	Pop.	NUMBER OF PEOPLE					Pop. Value
		30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	3,000,001 to 10,000,000	
Minimal Stream (< 10 cfs)	0	52,137	163,246	521,360	1,632,455	5,213,590	0
Small to moderate stream (10 to 100 cfs)	0	5,214	16,325	52,136	163,245	521,359	0
Moderate to large stream (> 100 to 1,000 cfs)	0	521	1,632	5,214	16,325	52,136	0
Large Stream to river (> 1,000 to 10,000 cfs)	0	52	163	521	1,632	5,214	0
Large River (> 10,000 to 100,000 cfs)	0	5	16	52	163	521	0
Very Large River (> 100,000 cfs)	0	0.5	2	5	16	52	0
Shallow ocean zone or Great Lake (depth < 20 feet)	0	5	16	52	163	521	0
Moderate ocean zone or Great Lake (Depth 20 to 200 feet)	0	0.5	2	5	16	52	0
Deep ocean zone or Great Lake (depth > 200 feet)	0	0.3	1	3	8	26	0
3-mile mixing zone in quiet flowing river ( $\geq$ 10 cfs)	0	26,068	81,623	260,680	816,227	2,606,795	0
Sum =							0

<sup>a</sup> Round the number of people to nearest integer. Do not round the assigned dilution-weighted population value to nearest integer.

<sup>b</sup> Treat each lake as a separate type of water body and assign it a dilution-weighted population value using the surface water body type with the same dilution weight from HRS Table 4-13 as the lake. If drinking water is withdrawn from coastal tidal water or the ocean, assign a dilution-weighted population value to it using the surface water body type with the same dilution weight from HRS Table 4-13 as the coastal tidal water or the ocean zone.



# SI TABLE 10: HUMAN FOOD CHAIN ACTUAL CONTAMINATION TARGETS FOR WATERSHED

Notes: Convert all results and SCDM values to  $\mu\text{g/kg}$  or ppb.  
If sum of percents calculated for I or J index is  $\geq 100\%$ , consider the fishery a Level I target; if sum of I or J index is  $< 100$  percent consider the fishery a Level II target. List only those substances that meet the observed release criteria in a fishery within the target distance limit and have a BCF of  $\geq 500$ ; BCF values are found on SI Table 7.

Fishery ID:		Sample Type:		Level I:	Level II:	References:		
Sample ID	Hazardous Substance	Conc. ( $\mu\text{g/kg}$ )	Benchmark Conc. (FDAAL)	% of Benchmark	RfD (J index)	% of RfD	Cancer Risk Conc. (I index)	% of Cancer Risk Conc.
Highest Percent				Sum of Percents		Sum of Percents		

Notes: There are no known human food chain actual contamination targets associated with the property.  
Reference Sample:

# SI TABLE 11: SENSITIVE ENVIRONMENT ACTUAL CONTAMINATION TARGETS FOR WATERSHED

Notes: Convert all results and SCDM values to  $\mu\text{g/L}$  or ppb.  
If the highest % of benchmark calculated is  $\geq 100\%$ , consider the sensitive env. a Level I target; if the highest % of benchmark calculated is  $< 100\%$  consider the sensitive env. a Level II target.

Environment ID:		Sample Type:		Level I:	Level II:	Environment Value:
Sample ID	Hazardous Substance	Conc. ( $\mu\text{g/L}$ )	Benchmark Conc. (AWQC or AALAC)	% of Benchmark	References	

SCDM Version: June 1996

Notes: There are no known sensitive environment actual contamination targets associated with the property.

# SURFACE WATER PATHWAY (Continued) HUMAN FOOD CHAIN THREAT WORKSHEET

HUMAN FOOD CHAIN THREAT TARGETS	Score	Data Type	Refs										
Record the water body type and flow for each fishery within the target distance limit. If there is no fishery within the target distance limit, assign a score of 0 at the bottom of this page.													
Fishery Name: Connecticut River    Water Body: Connecticut River    Flow: 18,877 cfs Species: unknown    Production: >0 lbs/yr Species:    Production: lbs/yr  Fishery Name: BB/SB    Water Body: BB/SB    Flow: 4.5 to 8.1 cfs Species: unknown    Production: >0 lbs/yr Species:    Production: lbs/yr			15;16										
<b>FOOD CHAIN INDIVIDUAL (Select highest value)</b>													
7. <b>ACTUAL CONTAMINATION FISHERIES:</b>  Assign 50 points for a Level I fishery only if tissue samples document an observed release of a substance with a BCF $\geq 500$ to a fishery within the target distance limit (SI Table 10). List substance(s): _____  Assign 45 points for a Level II fishery if surface water/sediment samples document an observed release of a substance with a BCF $\geq 500$ to a fishery within the target distance limit (SI Table 10). List substance(s): _____													
8. <b>POTENTIAL CONTAMINATION FISHERIES:</b>  Assign 20 points for a potential fishery if there is an observed release of a substance with a BCF $\geq 500$ (SI Table 7) to a watershed containing fisheries within the target distance limit, but no Level I or Level II fisheries are scored because there is no fishery documented between the PPE and the most downstream observed release sample point.  If there is no observed release of a substance with a BCF $\geq 500$ to a watershed, assign a value for potential contamination fisheries from the table below using the lowest flow of all fisheries within the target distance limit.													
<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th style="width: 40%;">Lowest Flow</th> <th style="width: 60%;">FCI Value</th> </tr> </thead> <tbody> <tr> <td>&lt; 10 cfs</td> <td>20</td> </tr> <tr> <td>10 to 100 cfs</td> <td>2</td> </tr> <tr> <td>&gt; 100 cfs, coastal tidal waters, oceans, or Great Lakes</td> <td>0</td> </tr> <tr> <td>3-mile mixing zone in quiet flowing river</td> <td>10</td> </tr> </tbody> </table>	Lowest Flow	FCI Value	< 10 cfs	20	10 to 100 cfs	2	> 100 cfs, coastal tidal waters, oceans, or Great Lakes	0	3-mile mixing zone in quiet flowing river	10			
Lowest Flow	FCI Value												
< 10 cfs	20												
10 to 100 cfs	2												
> 100 cfs, coastal tidal waters, oceans, or Great Lakes	0												
3-mile mixing zone in quiet flowing river	10												
<b>FCI Value =</b>	20		15;16										
<b>Targets    T =</b>	20												

Notes: BB/SB = Bancroft Brook and Stoughton Brook

## Alternate Scenario

If sediment sampling were to be conducted and sampling detected phosphoric acid (the only compound associated with the property having a BCF  $\geq 500$ ), T = 45

# SURFACE WATER PATHWAY (Continued)

## ENVIRONMENTAL THREAT WORKSHEET

When measuring length of wetlands that are located on both sides of a surface water body, sum both frontage lengths. For a sensitive environment that is more than one type, assign a value for each type.

### ENVIRONMENTAL THREAT TARGETS

					Score	Data Type	Refs
Record the water body and flow for each surface water sensitive environment within the target distance limit (see SI Table 12). If there is no sensitive environment within the target distance limit, assign a score of 0 at the bottom of the page.							
Environment Type (SI Table 13)	Water Body Name	Flow					
CWA Water body	Bancroft Brook	4.5 cfs			+	16;17;18	
Wetlands (1.36 miles)	Bancroft Brook	4.5 cfs					
Wetlands (0.19 miles)	Stoughton Brook	8.1 cfs					
Wetlands (8.64 miles)	Connecticut River	18,788 cfs					
Federal Endangered Species Habitat	Connecticut River	18,788 cfs					
<b>9. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS:</b> If sampling data or direct observation indicate any sensitive environment has been exposed to a hazardous substance from the site, record this information on SI Table 11, and assign a factor value for the environment (SI Tables 13 and 14).  Substance(s): _____  From Table: _____							
Environment Type (SI Table 13)	Environment Value (SI Tables 13 & 14)	Multiplier (10 for Level I, 1 for Level II)	Product				
		×	=				
		×	=				
		×	=				
		×	=				
<b>Sum =</b>							
<b>10. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS:</b>							
Flow	Dilution weight (SI Table 12)	Environment Type and Value (SI Tables 13 & 14)	Pot. Cont.	Product			
4.5 cfs	1 ×	Wetlands (50) ×	0.1 =	5.0			
8.1 cfs	1 ×	Wetlands (25) ×	0.1 =	2.5			
18,788 cfs	0.0001 ×	Wetlands (250) ×	0.1 =	0.025			
18,788 cfs	0.0001 ×	Fed. Endg. Species (100) ×	0.1 =	0.01			
4.5 cfs	1 ×	CWA water body (5) ×	0.1 =	0.5			
<b>Sum =</b>					8.035	+	16;17;18
<b>Sum of Targets T =</b>					8.035		

Notes: Fed. Endg. = Federal Endangered  
CWA = Clean Water Act

**Alternate Scenarios:** If the Scantic River segment is added to the existing downstream pathway the Targets value would become 8.06. If sediment sampling were to be conducted and sampling showed 0.1 miles of contaminated wetlands and CWA contamination, T = 37.5305. The sampling scenario assumes that only the Bancroft and Stoughton Brook pathway is evaluated (No Scantic River segment).

**SI TABLE 12 (HRS TABLE 4-13):  
SURFACE WATER DILUTION WEIGHTS**

* TYPE OF SURFACE WATER BODY		Assigned Dilution Weight
Descriptor	Flow Characteristics	
✓ Minimal stream	< 10 cfs	1
Small to moderate stream	10 to 100 cfs	0.1
Moderate to large stream	> 100 to 1,000 cfs	0.01
Large stream to river	> 1,000 to 10,000 cfs	0.001
✓ Large river	> 10,000 to 100,000 cfs	0.0001
Very large river	> 100,000 cfs	0.00001
Coastal tidal waters	Flow not applicable; depth not applicable	0.0001
Shallow ocean zone or Great Lake	Flow not applicable; depth less than 20 feet	0.0001
Moderate depth ocean zone or Great Lake	Flow not applicable; depth 20 to 200 feet	0.00001
Deep ocean zone or Great Lake	Flow not applicable; depth greater than 200 feet	0.000005
3-mile mixing zone in quiet flowing river	10 cfs or greater	0.5

\* Check all (✓) appropriate dilution weights.

Notes:



**SI TABLE 13 (HRS TABLE 4-23):  
SURFACE WATER AND AIR SENSITIVE ENVIRONMENTS VALUES**

*	Sensitive Environment	Assigned Value
✓	Critical habitat for Federal designated endangered or threatened species Marine Sanctuary National Park Designated Federal Wilderness Area Ecologically important areas identified under the Coastal Zone Wilderness Act Sensitive Areas identified under the National Estuary Program or Near Coastal Water Program of the Clean Water Act Critical Areas identified under the Clean Lakes Program of the Clean Water Act (subareas in lakes or entire small lakes) National Monument (air pathway only) National Seashore Recreation Area National Lakeshore Recreation Area	100
	Habitat known to be used by Federal designated or proposed endangered or threatened species National Preserve National or State Wildlife Refuge Unit of Coastal Barrier Resources System Coastal Barrier (undeveloped) Federal land designated for the protection of natural ecosystems Administratively Proposed Federal Wilderness Area Spawning areas critical for the maintenance of fish/shellfish species within a river system, bay, or estuary Migratory pathways and feeding areas critical for the maintenance of anadromous fish species within river reaches or areas in lakes or coastal tidal waters in which the fish spend extended periods of time Terrestrial areas utilized by large or dense aggregations of vertebrate animals (semi-aquatic foragers) for breeding National river reach designated as recreational	75
	Habitat known to be used by State designated endangered or threatened species Habitat known to be used by a species under review as to its Federal endangered or threatened status Coastal Barrier (partially developed) Federally designated Scenic or Wild River	50
	State land designated for wildlife or game management State designated Scenic or Wild River State designated Natural Area Particular areas, relatively small in size, important to maintenance of unique biotic communities	25
✓	State designated areas for the protection and maintenance of aquatic life under the Clean Water Act	5
✓	Wetlands See SI Table 14 (Surface Water Pathway) or SI Table 23 (Air Pathway)	

\* Check (✓) all environments impacted or potentially impacted by the site.

**SI TABLE 14 (HRS TABLE 4-24): SURFACE WATER WETLANDS FRONTAGE VALUES**

*	TOTAL LENGTH OF WETLANDS	ASSIGNED VALUE
	Less than 0.1 mile	0
✓	0.1 to 1 mile	25
	Greater than 1 to 2 miles	50
	Greater than 2 to 3 miles	75
	Greater than 3 to 4 miles	100
	Greater than 4 to 8 miles	150
✓	Greater than 8 to 12 miles	250
	Greater than 12 to 16 miles	350
	Greater than 16 to 20 miles	450
	Greater than 20 miles	500

\* Check (✓) highest value for each applicable flow characteristic.

Notes:

# SURFACE WATER PATHWAY (Concluded)

## WASTE CHARACTERISTICS, THREAT, AND PATHWAY SCORE SUMMARY

### WASTE CHARACTERISTICS

Score

11. If an Actual Contamination Target (drinking water, human food chain, or environmental threat) exists for the watershed, assign the calculated hazardous waste quantity score, or a score of 100, whichever is greater. If no Actual Contamination Targets exist, assign the hazardous waste quantity score calculated for sources available to migrate to surface water.

10

12. Assign the highest value from SI Table 3 or SI Table 7 for the hazardous substance waste characterization factors below. Multiply each by the surface water hazardous waste quantity score and determine the waste characteristics score for each threat.

	DWT	HFCT	ET
Substance(s):	1,1,2-trichloroethane	Phosphoric Acid	Aluminum
Value:	400	2.0E+06	5,000
From Table:	3	3	3

\*Footnote all substances which cannot fit on Table.

13. Multiply the toxicity and hazardous waste quantity scores. Assign the waste characteristics score for each threat from the table below.

Product	WC Score	DWT	HFCT	ET
0	0			
>0 to <10	1			
≥10 to <100	2			
≥100 to <1,000	3			
≥1,000 to <10,000	6	✓		
≥10,000 to <1E+05	10			✓
≥1E+05 to <1E+06	18			
≥1E+06 to <1E+07	32			
≥1E+07 to <1E+08	56		✓	
≥1E+08 to <1E+09	100			
≥1E+09 to <1E+10	180			
≥1E+10 to <1E+11	320			
≥1E+11 to <1E+12	560			
≥1E+12 or greater	1000			

\*check (✓) the WC score calculated for each threat

	Substance Value	HWQ	Product	WC Score (from Table)	
Drinking Water Threat (DWT) Toxicity × Persistence	400 ×	10 =	4,000	6	(Maximum of 100)
Food Chain Threat (HFCT) Toxicity × Persistence Bioaccumulation	2.0E+06 ×	10 =	2.0E+07	56	(Maximum of 1000)
Environmental Threat (ET) Ecotoxicity × Persistence × Ecobioaccumulation	5,000 ×	10 =	50,000	10	(Maximum of 1000)

Notes: Alternate Scenario

If sediment sampling were to be conducted and sampling documented actual contamination, then WC scores would increase by one order of magnitude.

## SURFACE WATER PATHWAY THREAT SCORES

Threat (T)	Likelihood of Release (LR) Score	Targets (T) Score	Pathway Waste Characteristics (WC) Score (determined above)	Threat Score $\frac{LR \times T \times WC}{82,500}$
Drinking Water (DW)	500	5	6	0.182 (Maximum of 100)
Human Food Chain (HFC)	500	20	56	6.788 (Maximum of 100)
Environmental (E)	500	8.035	10	0.487 (Maximum of 60)

Multiply LR by T and by WC. Divide the product by 82,500 for each threat (T). Sum the threat scores to obtain the surface water pathway score for each watershed/migration route. Select the highest watershed/migration route score. If the pathway score is greater than 100, assign 100.

### SURFACE WATER PATHWAY CALCULATION:

$$(DWT + HFCT + ET) =$$

7.457

(Maximum of 100)

#### Notes:

#### Calculations

Drinking Water (DW):  $(500 \times 5 \times 6) \div 82,500 = 0.182$

Human Food Chain (HFC):  $(500 \times 20 \times 56) \div 82,500 = 6.788$

Environmental (E):  $(500 \times 8.035 \times 10) \div 82,500 = 0.487$

Surface Water Pathway Score = DW + HFC + E =  $0.182 + 6.788 + 0.487 = 7.457$

#### Alternate Scenario

(A) If the Scantic River segment is added to the existing downstream pathway the Sensitive Environment Target value becomes 8.06 and the Surface Water Pathway score becomes 7.458.

(B) If sampling were to be conducted and a compound with a BCF  $\geq 500$  were detected documenting Human Food Chain and Sensitive Environment actual contamination, then the Surface Water Pathway score would be:

Drinking Water (DW):  $(550 \times 5 \times 10) \div 82,500 = 0.33$

Human Food Chain (HFC):  $(550 \times 45 \times 100) \div 82,500 = 30.0$

Environmental (E):  $(550 \times 37.53 \times 18) \div 82,500 = 4.50$

Surface Water Pathway Score = DW + HFC + E =  $0.33 + 30.0 + 4.5 = 34.83$

The sampling scenario assumes that only the Bancroft and Stoughton Brook pathway is evaluated (No Scantic River segment).

## SOIL EXPOSURE PATHWAY

**Pathway Description and Scoring Notes:** Identify all areas of observed contamination. Indicate whether a resident population is associated with the site and characterize the area surrounding the site. Identify the nearby population and any terrestrial sensitive environments located within the target distance limit.

Briefly discuss any sampling events relative to the Soil Exposure Pathway; provide dates of sampling events and a summary of the analytical results and whether an observed release and/or actual contamination targets were documented.

Indicate any assumptions you have made in scoring the Soil Exposure Pathway for this site, or any key factors which influenced your scoring rationale.

There are no residences located on the property. At the time of the START on-site reconnaissance, there were three people employed full-time by the W. F. Myette Corporation working on the property. The nearest residence is located approximately 300 feet east of the property at 590 Sullivan Avenue. According to the CENTRACTS report for the property, prepared by Frost Associates, Inc., there are approximately 1,846 people residing within 1-radial mile of the property. To date, no known soil samples have been collected on any residential properties associated with the MTC property. Based on available information and on-site observations, nearby residential properties are not considered likely targets [3;8].

START personnel conducted an on-site reconnaissance of the property on 29 May 1997. During the START on-site reconnaissance, it was observed that both vehicular and pedestrian access to the property is unrestricted. There are no schools or day-care facilities located within 200 feet of the property. The nearest school is the Wapping School, located on Ayers Street in South Windsor. This school is approximately 1.5 miles southeast of the property. There are no terrestrial sensitive environments located on the property [3].

There have been two documented hazardous material spills on the property. The first involved the release of approximately 3 gallons of hydrofluoric acid. This spill occurred on 18 October 1988 on the paved parking area of the property. As previously mentioned, the spill was neutralized on site with soda ash. START personnel were unable to locate any further information regarding the acid spill and/or the treatment and disposal of materials associated with the acid spill [4].

The second spill involved approximately 30 gallons of TCE. This spill occurred on a paved drum storage area at the rear of the property, on an unknown date. The spill was reported to the CT DEP on 30 April 1990. Soil sampling conducted on the property in 1990 supports a release of TCE to the soils of the property. As a result of the detection of TCE in the soils of the property, a soil vapor extraction system was installed. The soil vapor extraction system was operated from January 1991 until approximately October 1994, when it was shut down due to decreased levels of VOCs in the influent soil vapor [4;6].

Several surficial soil samples were collected from the area of the TCE spill both prior to the installation of the soil vapor extraction system and while the soil vapor extraction system was in operation. Fifteen soil samples (S-1, S-2, S-4, S-5, S-7 through S-15, S-17, and S-18) were collected as part of the soil sampling portion of the soil and groundwater survey. Six of the soil samples were collected from 0 to 24 inches below grade. The remaining soil samples were



## SOIL EXPOSURE PATHWAY (Continued)

collected from 2 to 4 feet below grade. The samples were collected from areas of the property which were thought to have been impacted by historical on-site operations [5].

The soil samples were analyzed for TPH via EPA Method 418.1, halogenated VOCs via EPA Method 8010, and aromatic VOCs via EPA Method 8020. Several of the soil samples were also analyzed for seven leachable metals (aluminum, cadmium, chromium, lead, silver, nickel, and zinc) via the EP TOX method. All of the soil sample analyses were conducted by Averill Environmental Laboratory, located in Plainville, Connecticut [5].

Results of the analyses conducted on the soil samples collected from 24 inches or less indicated that the soils of the property contained elevated levels of five organic compounds (1,4-dichlorobenzene; 1,1,1,2-tetrachloroethane; PCE; 1,1,2-trichloroethane; and TCE), one inorganic element (aluminum), and TPH. Detected concentrations ranged from 85 ppb for 1,1,2-trichloroethane to 17 ppm for TCE [5].

On 7 October 1992, representatives of TEC collected surficial soil samples from several of the locations where soil samples had been collected in 1990. The soil samples were collected at depths between 0 and 3.5 feet below grade. The area of the property that the 1992 soil samples were collected from had been under active remediation via soil vapor extraction for approximately 19 months. The 1992 soil samples were sent to Matrix Analytical Laboratory in Hopkinton, Massachusetts for halogenated VOCs analysis by EPA Method 8010. No halogenated VOCs were detected in any of the soil samples collected on 7 October 1992 [7].



# SI TABLE 15a: SOIL EXPOSURE OBSERVED CONTAMINATION SUBSTANCES

Source ID:

Sample ID	Hazardous Substance	Substance Concentration	Bckgrd. ID.	Bckgrd. Conc.	Toxicity	References
S-2 (3/90)	1,4-dichlorobenzene	1,200 ppb	S-5 (3/90)	ND (2 ppb)	10	5
S-2 (3/90)	1,1,1,2-tetrachloroethane	190 ppb	S-5 (3/90)	ND (2 ppb)	100	5
S-2 (3/90)	Tetrachloroethylene	2,900 ppb	S-5 (3/90)	ND (2 ppb)	100	5
S-2 (3/90)	1,1,2-trichloroethane	130 ppb	S-5 (3/90)	ND (2 ppb)	1,000	5
S-7 (3/90)	Trichloroethylene	17,000 ppb	S-5 (3/90)	ND (2 ppb)	10	5
S-7 (3/90)	Aluminum	760 ppb	S-4 (3/90)	ND (300 ppb)	NL	5
Highest Toxicity					1,000	

Notes: Listed compounds were detected in one or more soil samples. Highest detected concentrations are listed.  
ND = Not detected. The reference sample detection limit for the compound in question is indicated in parentheses.

## SI TABLE 15b: SOIL EXPOSURE RESIDENT POPULATION TARGETS

Notes: Convert all results and SCDM values to  $\mu\text{g/kg}$  or ppb. If sum of percent calculated for I or J index is  $\geq 100\%$ , consider residents Level I targets; if sum of I or J index is  $< 100\%$ , consider the residents Level II targets.


Residence ID:

Level I:

Level II:

Population:

Sample ID	Hazardous Substance	Conc. ( $\mu\text{g/kg}$ )	RfD (Index)	% of RfD	Cancer Risk Conc. (Index)	% of Cancer Risk Conc.	References

Sum of Percents

Sum of Percents

SCDM Version:  
Notes:

June 1996  
There are no known soil exposure resident population targets associated with the property.

# SOIL EXPOSURE PATHWAY WORKSHEET RESIDENT POPULATION THREAT

## LIKELIHOOD OF EXPOSURE

	Score	Data Type	Refs
1. <b>OBSERVED CONTAMINATION:</b> If evidence indicates presence of observed contamination (depth of 2 feet or less), assign a score of 550; otherwise, assign a 0. Note that a likelihood of exposure score of 0 results in a soil exposure pathway score of 0.	550	+	5

LE =

550

## TARGETS

2. <b>RESIDENT POPULATION:</b> Determine the number of people occupying residences or attending school or day care on contaminated property and within 200 feet of areas of observed contamination (HRS section 5.1.3).  Level I: $\frac{0}{0}$ people $\times 10 = \frac{0}{0}$ Level II: $\frac{0}{0}$ people $\times 1 = \frac{0}{0}$ Sum =	0	+	3;4
3. <b>RESIDENT INDIVIDUAL:</b> Assign a score of 50 if any Level I resident population exists. Assign a score of 45 if there are Level II targets but no Level I targets. If no resident population exists (i.e., no Level I or Level II targets), assign 0 (HRS Section 5.1.3).	0	+	3;4
4. <b>WORKERS:</b> Assign a score from the table below for the total number of workers at the site and nearby facilities and within areas of observed contamination associated with the site.			
Number of Workers	Score		
0	0		
1 to 100	5	+	3;4
101 to 1,000	10		
> 1,000	15		
5. <b>TERRESTRIAL SENSITIVE ENVIRONMENTS:</b> Assign a value for each terrestrial sensitive environment (SI Table 16) in an area of observed contamination.			
Terrestrial Sensitive Environment Type	Value		
Sum =	0	+	3;4
6. <b>RESOURCES:</b> Assign a score of 5 if any one or more of the following resources is present on area of observed contamination at the site; assign 0 if none applies. <ul style="list-style-type: none"> <li>Commercial agriculture</li> <li>Commercial silviculture</li> <li>Commercial livestock production or commercial livestock grazing</li> </ul>	0	+	3;4
Sum of Targets T =	5		

Notes:

# SOIL EXPOSURE PATHWAY WORKSHEET NEARBY POPULATION THREAT

## LIKELIHOOD OF EXPOSURE

		Score	Data Type	Ref.
7.	Attractiveness/Accessibility (from SI Table 17 or HRS Table 5-6)	Value: 10		
	Area of Contamination (from SI Table 18 or HRS Table 5-7)	Value: 20	+	3;4
	Likelihood of Exposure (from SI Table 19 or HRS Table 5-8)	LE = 5		

## TARGETS

		Score	Data Type	Ref.
8.	Assign a score of 0 if Level I or Level II resident individual has been evaluated or if no individuals live within 1/4 mile travel distance of an area of observed contamination. Assign a score of 1 if nearby population is within 1/4 mile travel distance and no Level I or Level II resident population has been evaluated.	1	+	3;4
9.	Determine the population within 1 mile travel distance that is not exposed to a hazardous substance from the site (i.e., properties that are not determined to be Level I or Level II); record the population for each distance category in SI Table 20 (HRS Table 5-10). Sum the population values and multiply by 0.1.	1.6	+	3;4
	Sum of Targets T =	2.6		

Notes:



**SI TABLE 16 (HRS TABLE 5-5): SOIL EXPOSURE PATHWAY  
TERRESTRIAL SENSITIVE ENVIRONMENT VALUES**

*	TERRESTRIAL SENSITIVE ENVIRONMENT	ASSIGNED VALUE
	Terrestrial critical habitat for Federal designated endangered or threatened species National Park Designated Federal Wilderness Area National Monument	100
	Terrestrial habitat known to be used by Federal designated or proposed threatened or endangered species National Preserve (terrestrial) National or State terrestrial Wildlife Refuge Federal land designated for protection of natural ecosystems Administratively proposed Federal Wilderness Area Terrestrial areas utilized by large or dense aggregations of animals (vertebrate species) for breeding	75
	Terrestrial habitat used by State designated endangered or threatened species Terrestrial habitat used by species under review for Federal designated endangered or threatened status	50
	State lands designated for wildlife or game management State designated Natural Areas Particular areas, relatively small in size, important to maintenance of unique biotic communities	25

\* - Check (✓) all environments impacted or potentially impacted by the site.

Notes: There are no known terrestrial sensitive environments located on the property.

**SI TABLE 17 (HRS TABLE 5-6);  
ATTRACTIVENESS/ACCESSIBILITY VALUES**

*	AREA OF OBSERVED CONTAMINATION	ASSIGNED VALUE
	Designated recreational area	100
	Regularly used for public recreation (for example, vacant lots in urban area)	75
	Accessible and unique recreational area (for example, vacant lots in urban area)	75
	Moderately accessible (may have some access improvements-for example, gravel road) with some public recreation use	50
	Slightly accessible (for example, extremely rural area with no road improvement) with some public recreation use	25
✓	Accessible with no public recreation use	10
	Surrounded by maintained fence or combination of maintained fence and natural barriers	5
	Physically inaccessible to public, with no evidence of public recreation use	0

\* Check (✓) highest value.

**SI TABLE 18 (HRS TABLE 5-7): AREA OF CONTAMINATION FACTOR  
VALUES**

*	TOTAL AREA OF THE AREAS OF OBSERVED CONTAMINATION (SQUARE FEET)	ASSIGNED VALUE
	≤ to 5,000	5
✓	> 5,000 to 125,000	20
	> 125,000 to 250,000	40
	> 250,000 to 375,000	60
	> 375,000 to 500,000	80
	> 500,000	100

\* Check (✓) highest value.

Notes:

SI TABLE 19 (HRS TABLE 5-8): NEARBY POPULATION LIKELIHOOD OF EXPOSURE FACTOR VALUES

Area of Contamination Factor Value	Attractiveness/Accessibility Factor Value						
	100	75	50	25	10	5	0
100							
80							
60							
40							
20							
5							

SI TABLE 20 (HRS TABLE 5-10): DISTANCE-WEIGHTED POPULATION VALUES FOR NEARBY POPULATION THREAT

Travel Distance Category (miles)	Pop.	NUMBER OF PEOPLE WITHIN THE TRAVEL DISTANCE CATEGORY										Pop. Value		
		0 to 1	1 to 11	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,001	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000		300,001 to 1,000,000	
Greater than 0 to 1/4	112	0	0.1	0.4	1.0	4	13	41	130	408	1,303	4,081	13,034	4
Greater than 1/4 to 1/2	289	0	0.05	0.2	0.7	2	7	20	65	204	652	2,041	6,517	2
Greater than 1/2 to 1	1,445	0	0.02	0.1	0.3	1	3	10	33	102	326	1,020	3,258	10
													Sum =	16

References: [8]  
Notes:

# SOIL EXPOSURE PATHWAY WORKSHEET (Concluded)

## WASTE CHARACTERISTICS

Score

10.	Assign the hazardous waste quantity score calculated for soil exposure	10																						
11.	Assign the highest toxicity value from SI Table 15a.																							
	Substance(s): <u>1,1,2-trichloroethane</u> <u>Tetrachloroethylene</u> <u>1,1,1,2-tetrachloroethane</u>																							
	Value: <u>1,000</u> <u>100</u> <u>100</u>																							
	From Table: <u>15a</u> <u>15a</u> <u>15a</u>																							
12.	Multiply the toxicity and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below:																							
	<table border="1"> <thead> <tr> <th>Product</th> <th>WC Score</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td></tr> <tr><td>&gt;0 to &lt;10</td><td>1</td></tr> <tr><td>≥10 to &lt;100</td><td>2</td></tr> <tr><td>≥100 to &lt;1,000</td><td>3</td></tr> <tr><td>≥1,000 to &lt;10,000</td><td>6</td></tr> <tr><td>≥10,000 to &lt;1E+05</td><td>10</td></tr> <tr><td>≥1E+05 to &lt;1E+06</td><td>18</td></tr> <tr><td>≥1E+06 to &lt;1E+07</td><td>32</td></tr> <tr><td>≥1E+07 to &lt;1E+08</td><td>56</td></tr> <tr><td>≥1E+08 or greater</td><td>100</td></tr> </tbody> </table>	Product	WC Score	0	0	>0 to <10	1	≥10 to <100	2	≥100 to <1,000	3	≥1,000 to <10,000	6	≥10,000 to <1E+05	10	≥1E+05 to <1E+06	18	≥1E+06 to <1E+07	32	≥1E+07 to <1E+08	56	≥1E+08 or greater	100	
Product	WC Score																							
0	0																							
>0 to <10	1																							
≥10 to <100	2																							
≥100 to <1,000	3																							
≥1,000 to <10,000	6																							
≥10,000 to <1E+05	10																							
≥1E+05 to <1E+06	18																							
≥1E+06 to <1E+07	32																							
≥1E+07 to <1E+08	56																							
≥1E+08 or greater	100																							
	*check (✓) the WC score calculated for the pathway																							
	WC =	10																						

## RESIDENT POPULATION THREAT SCORE:

(Likelihood of Exposure, Question 1;  
Targets = Sum of Questions 2, 3, 4, 5, 6)

$$\frac{LE \times T \times WC}{82,500} = 0.333$$

## NEARBY POPULATION THREAT SCORE:

(Likelihood of Exposure, Question 7;  
Targets = Sum of Questions 8, 9)

$$\frac{LE \times T \times WC}{82,500} = 0.002$$

## SOIL EXPOSURE PATHWAY CALCULATION:

Resident Population Threat + Nearby Population Threat =

0.335

(Maximum of 100)

Notes:

Calculations:

Resident Population  $(550 \times 5 \times 10) \div 82,500 = 0.333$

Nearby Population  $(5 \times 2.6 \times 10) \div 82,500 = 0.002$

Soil Exposure Score  $= 0.333 + 0.002 = 0.335$

## AIR MIGRATION PATHWAY

**Pathway Description and Scoring Notes:** Describe the Air Migration Pathway. Identify the nearest potential receptors of airborne contaminants and the population residing within four miles of the site. Identify any sensitive environments located within the target distance limit.

Briefly discuss any sampling events relative to the Air Pathway; provide dates of sampling events and a summary of the analytical results and whether an observed release and/or actual contamination targets were documented.

Indicate any assumptions you have made in scoring the Air Pathway for this site, or any key factors which influenced your scoring rationale.

The nearest residence is located approximately 300 feet east of the property at 590 Sullivan Avenue. The CENTRACTS report prepared by Frost Associates, Inc. indicates that there are an estimated 33,271 people residing within 4-radial miles of the property. At the time of the START on-site reconnaissance, there were three employees of the W. F. Myette Corporation working on the property. The 4-radial mile population value does not include the three on-site workers. The following table summarizes the population distribution within 4-radial miles of the property [3;8].

**Estimated Population Within 4-Radial Miles of  
Metals Testing Company (Former)**

Radial Distance From Metals Testing Company (Former) (miles)	Estimated Population
On-site	3
0.00 < 0.25	112
0.25 < 0.50	289
0.50 < 1.00	1,445
1.00 < 2.00	4,413
2.00 < 3.00	9,961
3.00 < 4.00	17,051
TOTAL	33,274

[3;8]

There are no Federal-endangered, threatened, or candidate species habitats located within 4-radial miles of the property. However, there are several other sensitive environments within 4-radial miles of the property, including 16 occurrences of State-threatened or endangered species habitats and 14 occurrences of State special concern species habitats. There are also approximately 2,022 acres of wetlands located within 4-radial miles of the property. The following table summarizes the sensitive environments located within 4-radial miles of the property [17;18].



## AIR MIGRATION PATHWAY (Continued)

### Sensitive Environments Located Within 4-Radial Miles of Metals Testing Company (Former).

Radial Distance from Metals Testing Company (Former) (miles)	Sensitive Environment/Species (status)
0.00 < 0.25	3 acres of wetlands.
	1 occurrence of State Special Concern species habitat.
0.25 < 0.50	18 acres of wetlands.
	1 occurrence of a State-endangered species habitat.
	1 occurrence of State Special Concern species habitat.
0.50 < 1.00	126 acres of wetlands.
	3 occurrences of State-threatened species habitats.
	2 occurrences of State Special Concern species habitats.
1.00 < 2.00	420 acres of wetlands.
2.00 < 3.00	574 acres of wetlands.
	4 occurrences of State-endangered species habitats.
	6 occurrences of State-threatened species habitats.
	4 occurrences of State Special Concern species habitats.
3.00 < 4.00	881 acres of wetlands.
	2 occurrences of State-endangered species habitats.
	6 occurrences of State Special Concern species habitats.

[17;18]

No previous known quantitative air sampling has been conducted at the property. During the on-site reconnaissance, START personnel conducted air monitoring utilizing a PID. No readings above background were detected during START air monitoring activities [3].

Note: Mobility equals 1 for all observed release substances.

Note: Mobility equals 1 for all observed release substances.

Notes: There are no known air pathway observed release substances associated with the property.

Note: Convert all results and SCDM values to  $\mu\text{g}/\text{m}^3$  or ppb.

Note: Convert all results and SCDM values to  $\mu\text{g}/\text{m}^3$  or ppb.

Sample ID:

~~Level I:~~

Level II:

~~Distance from Sources (mi):~~

### References:

**Highest Tox.**  
**× Mobility**

Highest Percent

Sum of  
Percents

Sum of  
Percents

**Sample ID:**

**Level I:**

**Level II:**

Distance from Sources (m):

### References:

Highest Tox.  
× Mobility

Highest Percent

**Sum of  
Percents**

Sum of  
Percents

Notes: There are no known air pathway actual contamination targets associated with the property.

## AIR PATHWAY WORKSHEET

**LIKELIHOOD OF RELEASE**

1. <b>OBSERVED RELEASE:</b> If sampling data or direct observation support a release to air, assign a score of 550. Record observed release substances on SI Table 21.				
2. <b>POTENTIAL TO RELEASE:</b> If sampling data do not support a release to the air, assign a score of 500. Optionally, evaluate air migration gaseous and particulate potential to release (HRS Section 6.1.2).	500			3

LE

## TARGETS

TARGETS		Score	Type	Refs														
3. ACTUAL CONTAMINATION POPULATION: Determine the number of people within the target distance limit subject to exposure from a release of a hazardous substance to the air.  Level I: $\frac{0}{0} \text{ people} \times 10 = \frac{0}{0}$ Level II: $\frac{0}{0} \text{ people} \times 1 = \frac{0}{0}$ <b>Total =</b>		0	-	3														
4. POTENTIAL TARGET POPULATION: Determine the number of people within the target distance limit not subject to exposure from a release of a hazardous substance to the air using SI Table 22. Sum the values and multiply by 0.1.		14.7	+	3;8														
5. NEAREST INDIVIDUAL: Assign a score of 50 if there are any Level I targets. Assign a score of 45 if there are Level II targets but no Level I targets. If no Actual Contamination Population exists, assign the Nearest Individual score from SI Table 22.		20	+	3;8														
6. ACTUAL CONTAMINATION SENSITIVE ENVIRONMENTS: Sum the sensitive environment values (SI Table 13) and wetland acreage values (SI Table 23) for environments subject to exposure from the release of a hazardous substance to the air. <table><tr><th>Sensitive Environment Type</th><th>Value</th></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr><tr><th>Wetland Acreage</th><th>Value</th></tr><tr><td> </td><td> </td></tr><tr><td> </td><td> </td></tr></table>		Sensitive Environment Type	Value							Wetland Acreage	Value					0	+	17
Sensitive Environment Type	Value																	
Wetland Acreage	Value																	
7. POTENTIAL CONTAMINATION SENSITIVE ENVIRONMENTS: Use SI Table 24 to evaluate sensitive environments not subject to exposure from a release.		2.893	+	17;18														
8. RESOURCES: Assign a score of 5 if one or more air resources applies within 1/2 mile of a source; assign a 0 if none applies • Commercial agriculture • Commercial silviculture • Major or designated recreation area		5	+	3														
Sum of Targets T =		42.593																

Notes:

## AIR PATHWAY WORKSHEET (Concluded)

### WASTE CHARACTERISTICS

	Score																																	
9. If any Actual Contamination Targets exist for the air pathway, assign the calculated hazardous waste quantity score or a score of 100, whichever is greater; if there are no Actual Contamination Targets for the air pathway, assign the calculated HWQ score for sources available for air migration.	10																																	
10. Assign the highest air toxicity × mobility value from SI Table 21a or SI Table 3.  Substance(s): <u>1,1,2-trichloroethane</u> Value: <u>1,000</u> From Table: <u>3</u>	1,000																																	
11. Multiply the toxicity and hazardous waste quantity scores. Assign the Waste Characteristics score from the table below:  <table border="1" style="margin: 10px auto; border-collapse: collapse;"> <thead> <tr> <th>Product</th> <th>WC Score</th> <th>*</th> </tr> </thead> <tbody> <tr><td>0</td><td>0</td><td></td></tr> <tr><td>&gt;0 to &lt;10</td><td>1</td><td></td></tr> <tr><td>≥10 to &lt;100</td><td>2</td><td></td></tr> <tr><td>≥100 to &lt;1,000</td><td>3</td><td></td></tr> <tr><td>≥1,000 to &lt;10,000</td><td>6</td><td></td></tr> <tr><td>≥10,000 to &lt;1E+05</td><td>10</td><td>✓</td></tr> <tr><td>≥1E+05 to &lt;1E+06</td><td>18</td><td></td></tr> <tr><td>≥1E+06 to &lt;1E+07</td><td>32</td><td></td></tr> <tr><td>≥1E+07 to &lt;1E+08</td><td>56</td><td></td></tr> <tr><td>≥1E+08 or greater</td><td>100</td><td></td></tr> </tbody> </table> <p style="font-size: small;">*check (✓) the WC score calculated for the pathway</p>	Product	WC Score	*	0	0		>0 to <10	1		≥10 to <100	2		≥100 to <1,000	3		≥1,000 to <10,000	6		≥10,000 to <1E+05	10	✓	≥1E+05 to <1E+06	18		≥1E+06 to <1E+07	32		≥1E+07 to <1E+08	56		≥1E+08 or greater	100		
Product	WC Score	*																																
0	0																																	
>0 to <10	1																																	
≥10 to <100	2																																	
≥100 to <1,000	3																																	
≥1,000 to <10,000	6																																	
≥10,000 to <1E+05	10	✓																																
≥1E+05 to <1E+06	18																																	
≥1E+06 to <1E+07	32																																	
≥1E+07 to <1E+08	56																																	
≥1E+08 or greater	100																																	
WC =	10																																	

Multiply LR by T and by WC. Divide the product by 82,500 to obtain the air migration pathway score. If the pathway score is greater than 100, assign 100.

### AIR MIGRATION PATHWAY CALCULATION:

$$\frac{LE \times T \times WC}{82,500} =$$

2.58

(Maximum of 100)

### Notes:

Calculations:  $(500 \times 42.593 \times 10) \div 82,500 = 2.58$

**SI TABLE 22 (FROM HRS TABLE 6-17): VALUES FOR POTENTIAL CONTAMINATION AIR TARGET POPULATIONS**

Distance From Site	Pop.	Nearest Individual (choose highest)	NUMBER OF PEOPLE WITHIN THE DISTANCE CATEGORY												Pop. Value
			1 to 10	11 to 30	31 to 100	101 to 300	301 to 1,000	1,001 to 3,000	3,001 to 10,000	10,001 to 30,000	30,001 to 100,000	100,001 to 300,000	300,001 to 1,000,000	1,000,001 to 3,000,000	
On a source	3	20	4	17	53	164	522	1,633	5,214	16,325	52,137	163,246	521,360	1,632,455	4
0 to 1/4 mile	112	*	1	4	13	41	131	408	1,304	4,081	13,034	40,812	130,340	408,114	41
> 1/4 to 1/2 mile	289	2	0.2	0.9	3	9	28	88	282	882	2,815	8,815	28,153	88,153	9
> 1/2 to 1 mile	1,445	1	0.06	0.3	0.9	3	8	26	83	261	834	2,612	8,342	26,119	26
> 1 to 2 miles	4,413	0	0.02	0.09	0.3	0.8	3	8	27	83	266	833	2,659	8,326	27
> 2 to 3 miles	9,961	0	0.009	0.04	0.1	0.4	1	4	12	38	120	375	1,199	3,755	12
> 3 to 4 miles	17,051	0	0.005	0.02	0.07	0.2	0.7	2	7	28	73	229	730	2,285	28
Nearest Individual =		20	Sum =												147

\*Score = 20 if the Nearest Individual is within 1/8 mile of a source; score = 7 if the Nearest Individual is between 1/8 and 1/4 mile of a source.

**References:**

Notes: Three employees of the WF Myette Co. currently work on a source.



**SI TABLE 23 (HRS TABLE  
6-18): AIR PATHWAY  
VALUES FOR WETLAND AREA**

* WETLAND AREA	ASSIGNED VALUE
< 1 acre	0
1 to 50 acres	25
> 50 to 100 acres	75
> 100 to 150 acres	125
> 150 to 200 acres	175
> 200 to 300 acres	250
> 300 to 400 acres	350
> 400 to 500 acres	450
✓ > 500 acres	500

\* Check (✓) highest value.

**SI TABLE 24: DISTANCE WEIGHTS AND  
CALCULATIONS FOR AIR PATHWAY POTENTIAL  
CONTAMINATION SENSITIVE ENVIRONMENTS**

DISTANCE	DISTANCE WEIGHT	SENSITIVE ENVIRONMENT TYPE AND VALUE (FROM SI TABLES 13 AND 23)	PRODUCT
On a Source	0.10	×	0
		×	
0 to 1/4 mile	0.025	×	1.25
		× 3 acres - wetlands = (25)	
		× 1 occurrence of A = (25)	
1/4 to 1/2 mile	0.0054	×	0.54
		× 18 acres - wetlands (25)	
		× 1 occurrence of A = (25)	
1/2 to 1 mile	0.0016	×	0.52
		× 1 occurrence of B = (50)	
		× 125 acres - wetlands (125)	
1 to 2 miles	0.0005	×	0.225
		× 2 occurrences of A = (50)	
		× 3 occurrences of B = (150)	
2 to 3 miles	0.00028	×	0.253
		× 420 acres - wetlands (450)	
		×	
3 to 4 miles	0.00014	×	0.195
		× 574 acres - wetlands (500)	
		× 4 occurrences of A = (100)	
> 4 miles	0	×	2.893
		×	
		×	
Total Environments Score =			2.893

Notes: A = State special concern species (value = 25/occurrence)  
B = State threatened/endangered species (value = 50/occurrence)

# **SITE SCORE CALCULATION**

	S	S <sup>2</sup>
GROUNDWATER PATHWAY SCORE (S <sub>GW</sub> )	9.84	96.83
SURFACE WATER PATHWAY SCORE (S <sub>SW</sub> )	7.457	55.61
SOIL EXPOSURE PATHWAY SCORE (S <sub>SE</sub> )	0.335	0.11
AIR PATHWAY SCORE (S <sub>A</sub> )	2.58	6.66
SITE SCORE	$\sqrt{S_{GW}^2 + S_{SW}^2 + S_{SE}^2 + S_A^2} = 6.31$	

## **COMMENTS:**

### Alternate Scenario

- (A) If two potential surface water pathways were to be evaluated the Surface Water Pathway score would become 7.458. The overall Site Score would not change.
- (B) If sediment sampling were to be conducted and a compound with a BCF  $\geq 500$  were detected documenting Human Food Chain and Sensitive Environment actual contamination, then the Surface Water Pathway score would become 34.83 (see pages 33, 38, 39, 42, and 43). The resulting overall Site Score would become 18.13.

### **WARNING!!**

EPA has determined that the HRS score of any site that is progressing towards listing on the NPL is confidential. Deliberations regarding scoring or listing issues, the site specific status, and HRS scores cannot be released or discussed with non-Agency persons. For additional guidance see the April 30, 1993 OSWER Directive 9320.1-11.

**METALS TESTING COMPANY (FORMER)  
REFERENCES**

- [1] Town of South Windsor. 1997. Town of South Windsor, Connecticut Assessors Card for 570 Sullivan Avenue.
- [2] U.S. Geology Survey (USGS). 1984. Manchester, Connecticut, 1:24,000 scale topographic map. 7.5-Minute Quadrangle.
- [3] Superfund Technical Assessment and Response Team (START). 1997. Field Logbook for Metal Testing Company Site Inspection. TDD No. 97-02-0009.
- [4] Connecticut Department of Environmental Protection (CT DEP) 1994. Metal Testing Company - Preliminary Assessment Report. 5 April.
- [5] Consulting Environmental Engineers, Inc. 1990. Soil and Groundwater Sampling and Analysis Summary for Metals Testing Company. May.
- [6] ENSA Environmental, Inc. 1995. Report of Findings for the Former Metals Testing Site. 21 August.
- [7] TRI-S Environmental Consulting, Inc. 1993. Former Metals Testing Site - South Windsor, Connecticut - Report of Findings. 8 April.
- [8] Frost Associates, Inc. 1997. Project Note, Metal Testing Company, RE: Population and Private Well Users. TDD No. 97-02-0009. 8 April.
- [9] ERD Environmental, Inc. 1997. Report of Findings for the Former Metals Testing Site. March.
- [10] U.S. Department of Commerce. Climatography of the United States No. 81. Monthly Station Normals of Temperature, Precipitation, and Heating and Cooling Degree Days 1961-1990.
- [11] Jennings, M. (START). 1997. Telephone Conversation Record with George Donohue of the Hillsdale Water Company, RE: Well Location and Population Served. TDD No. 97-02-0009. 24 April.
- [12] Jennings, M. (START). 1997. Project Note, Metal Testing Company, RE: Public Wells within 4 Radial Miles. TDD No. 97-02-0009.
- [13] TRI-S Environmental Consulting, Inc. 1992. Summary Report for Metals Testing Company. 29 May.
- [14] ENSA/TRI-S Environmental Consulting, Inc. 1994. Report of Findings for the Former Metals Testing Site. 8 April.

**METALS TESTING COMPANY (FORMER)**  
**REFERENCES (Concluded)**

- [15] Jennings, M. (START). 1997. Project Note, Metal Testing Company, RE: Metal Testing Company - Surface Water Pathway. TDD No. 97-02-0009. 21 April.
- [16] Jennings, M. (START). 1997. Project Note, Metal Testing Company, RE: Metal Testing Company - Surface Water Pathway - Flow Rate Information. TDD No. 97-02-0009. 1 May.
- [17] Jennings, M. (START). 1997. Project Note, Metal Testing Company, RE: Metal Testing Company - Air and Surface Water Pathway - Wetland Determination. TDD No. 97-02-0009. 7 May.
- [18] Connecticut Department of Environmental Protection (CT DEP). 1997. Project Note, Metal Testing Company, RE: Natural Diversity Data Base Search. TDD No. 97-02-0009. 25 June.
- [19] Jennings, M. (START). 1997. Telephone Conversation Record with Cliff McClellen of the Connecticut Health Department, RE: Well Information. TDD No. 97-02-0009. 23 April.
- [20] U.S. Environmental Protection Agency. 1996. Superfund Chemical Data Matrix. June.
- [21] U.S. Environmental Protection Agency. 1997. Comprehensive Environmental Response Compensation, and Liability Information System (CERCLIS). Printout dated 3 October.
- [22] U.S. Environmental Protection Agency. 1996. Resource Conservation and Recovery Information System (RCRIS) Database. Printout dated 16 September.
- [23] Murphy, James E. (CT DEP). 1987. *Water Quality Classifications Map of Connecticut*.